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PLAY METER

FEBRUARY 15, 1983



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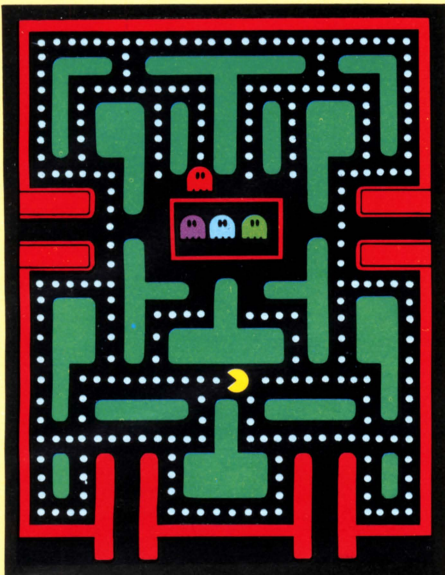
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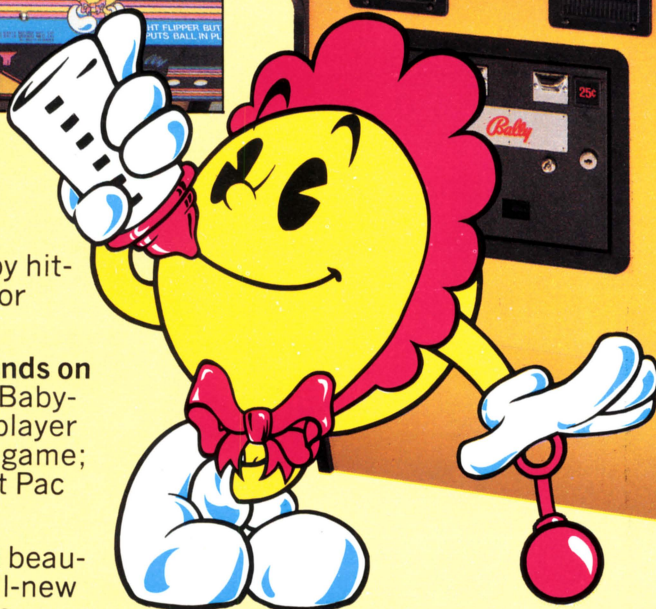


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PLAY METER

Twice a Month Publication for the Coin Operated Entertainment Industry

 **BPA** Member Business Publications Audit

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AMOA Ambassador

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Wesley Lawson is a joiner, a leader, a fundamentalist, an "old-timer," a contemporary businessman, and president of the AMOA. Mike Shaw visited Lawson and gives a personal account of AMOA's man of the year.

Arcade Handbook

38

Gerald A. Walford, manager of the Outer Limits Amusement Center in Temple Hills, Maryland, shows you how to have a detailed record and history on your business. His handbook helps you predict trends and profits and, among other things, also informs attendants on customer relations and cash procedures.

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Bowling & Ice Cream Designs



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UP FRONT

Once again the policy of *Play Meter* and Amusement Operators' Expo is being questioned with respect to so-called gray area equipment and whether gray area exhibitors will be welcomed at the forthcoming show in Chicago in March. The answer is still no. The policy at Expo will be consistent with the policy followed by *Play Meter* in accepting advertisements.

Play Meter believes it is very much in the best interests of the amusement game industry it serves to differentiate clearly among the three categories into which coin-operated games fall, bona fide amusement, bona fide gambling, and camouflaged or subterfuge gambling. There is no honest confusion among these categories, and in the long run, manufacturers and operators of legitimate gambling devices are going to be hurt almost as much as the amusement industry by the continued efforts of irresponsible promoters to defy anti-gambling laws with gray area devices.

Defying valid laws in this field is criminal activity; doing so on a planned scale is criminal conspiracy; defying local gambling statutes by an organized enterprise of any substantial size even triggers severe federal racketeering sanctions. *Play Meter* believes the coin machine industry has enough serious image problems already without taking on any appearance of intentional criminality.

Legitimate manufacturers of uncamouflaged gambling equipment are not invited to participate in Expo because *Play Meter* feels the amusement-only segment of the industry has so many interests in common there would not be a fair place in the Expo

program for gambling subjects.

The gaming industry now has splendid shows and conferences centering on its own interests—although *Play Meter* would not rule out some jointly-sponsored meeting or events in the future (especially if off-line lotteries prove successful so lottery-sponsored coin-operated devices are some day legalized for operation in arcades and amusement street locations).

But gray area devices are something else. The 1983 Expo exhibitors' contract authorizes *Play Meter* to refuse to show any machine or equipment "if, during normal commercial operation it is illegal as a gambling device per se under the laws of any U.S. jurisdiction or if it is designed, manufactured, and/or intended for use primarily for gambling." No one who knows enough about our industry to be reading *Play Meter* with interest and comprehension could have any doubt what that means, but the contract also specifies factors to be evaluated (cash payouts, point systems to tally winnings, multiple coin stakes, knock-off circuitry, absence of skill, etc.).

The line is clear, and *Play Meter* intends to hold it. We are confident most of our readers and advertisers stand behind us in this.



Ralph C. Lally
Editor and Publisher



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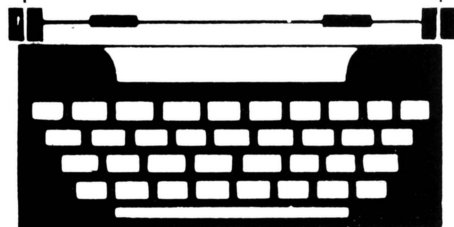
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Letters to the editor . . .



Game costs

I've never purchased anything from R.H. Belam, so my support is totally unsolicited. I have to agree 100 percent with them in the Letters to the Editor of your December 15, 1982 issue, page 13.

I own two game rooms both with approximately 25 games, where I'd say 10 games generate 90 percent of my income to each. I'm continually faced with buying \$2,500 machines. Before the last one I bought can produce \$500 of its cost, it's either obsolete or has dropped over \$1,000 in market value (with some exceptions, *Galaga*, *Robotron*, and *Stargate*).

The pressure of the public to have the newest game and my wanting the best games has prompted me to be the first on the block to have a new *Space Duel*, *Dig Dug*, *Tempest*, *Qix*, etc., which I bought new this year and am afraid to sit down and figure their market value today. I did on *Dig Dug*. One distributor wants to sell me a new one for \$200 less than I still owe to another distributor!! As usual I'd do better if they just repossessed it!!

Why do all games start out at \$2,500? If *Centipedes* are produced and sold for \$1,500 now, why were they always \$1,000 more? The components didn't get cheaper. How about subsidizing our cost (your customers instead of your lawyers). I agree with Belam's opinion. If the real thing was more affordable, the copy would get little or no consideration. Our system of free enterprise will always prevail. The monopoly can't be preserved by copyrights. In essence, if manufacturers helped my bottom line, I'd help theirs and buy more of the new machines coming out every week, and we could all make money.

Frank Paterniti
Gameland U.S.A. Inc.
Spring Hill, Florida

Home videos, golden eggs

Your December 15 editorial struck a nerve. Home video games are giving coin operators fits. There should be a way for the manufacturers to make money without bankrupting the operators. (See December 15, pg. 10.)

If, when a new game is offered, a pledge is given that the game will not be released for four or five years, the operators would have a chance to get their money back before the game becomes "public."

I for one will support exclusively those that put a release date on each new machine they sell. This should be

a strong operator input at the AMOA to get the manufacturers to agree. I think they are killing the goose that's been laying the golden eggs!

William F. Wilson
Ruidoso, New Mexico

After hours

Would you please send me one of your signs that was in your journal that said "18 year olds or younger can not play the machines during school hours?"

Richard G. Dexter
Superintendent
Winnebago Public Schools
Winnebago, Nebraska



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NEWS

BY
MIKE
SHAW

HOME GAMES HEAD TOWARD ARCADES • MAJORS OFFER CONVERSIONS • AGE BAN WAITS FOR MESQUITE RULING • FINAL HOUR VICTORY IN BOSTON • AMOA CONSIDERS CIGARETTE OPS • INFRINGER GETS JAIL TERM • GROSS RECEIPTS TAX UNENFORCEABLE • KANSAS STRUGGLES WITH "GRAY AREAS" • BALLY, IGT SETTLE SUIT • TENNESSEE CONSIDERS COIN-OP TAX • GAME MAKERS COMPLY WITH FCC
AGMA TAKES GAMES TO OFFICIALS

HOME GAMES HEAD TOWARD ARCADES

In a landmark licensing event, Silco Corporation's new licensing subsidiary, Bally Amusement Manufacturing, and Data Age, a California based home video software producer, have entered in an agreement whereby a home video game will be licensed to a coin-op manufacturer for production and sale to the commercial video game industry.

The agreement marks the first such event and comes as the firstborn effort of Silco Videogames Licensing, an extension of the Los Angeles firm generally considered to be the nation's largest operator of coin-op games.

SVL will also act as agent to coin-op manufacturers who wish to license

successful arcade games to home video cassette producers.

"In some instances, then, the client will become the customer," said SVL President Tom Bonetti, a 25-year entertainment industry veteran specializing in product licensing. He had been an executive vice president of GRT corporation before forming his own product and licensing business in 1978. "There is a need for a sophisticated clearinghouse for customers on both ends," he said.

Under the agreement, Bally will produce and market *Journey's Escape*, a rock 'n' roll video game based on the rock group *Journey* and its best selling album *Escape*. Bonetti's production company packaged the game for Data Age.

Bonetti said the rationale for forming the licensing agency at Silco was "obvious." He noted that just as it has been proven that successful arcade games sell well in home versions, so the players of the best home games would like to be able to play a "more

sophisticated" version of those games in an arcade.

Bonetti, who talked to *Play Meter* from his suite at the Consumer Electronics Show in Las Vegas, implied Silco was an appropriate firm to act as a video game licensing agent because of its presence in the coin-op field. Silco controls about 50,000 games that represent about 75 percent of its \$50 million a year business.

Among its national accounts is the 7-Eleven chain. Silco's company-owned street operation encompasses some 10,000 video games and 5,000 cigarette, pool, and other coin-op pieces in California, Arizona, Colorado, and Hawaii.

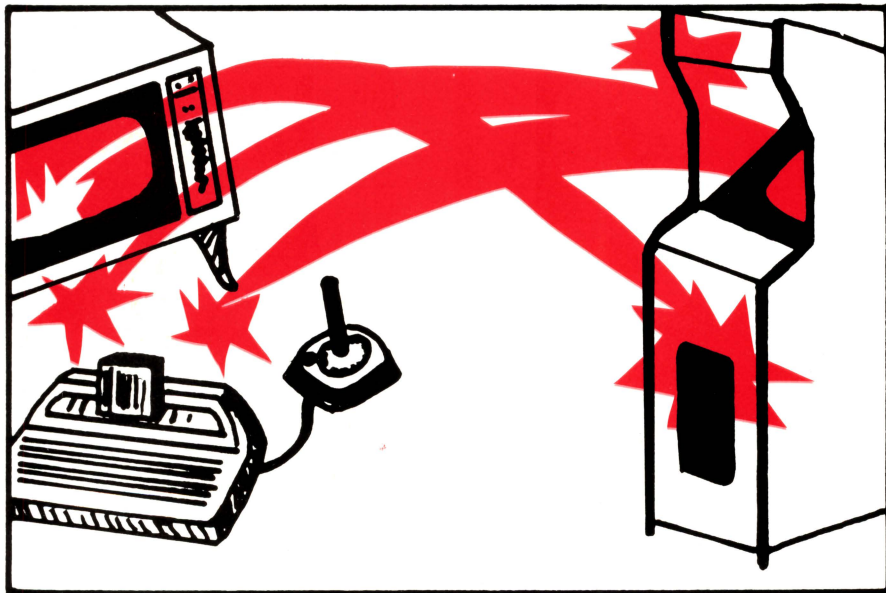
MAJORS OFFER CONVERSIONS

As operators seek alternatives to buying complete new video games to update their offerings to customers, some of the major manufacturers are offering conversion kits for old games.

Specifically, Sega and Stern have recently announced the availability of conversion kits.

Sega released *Super Zaxxon* as a conversion. The firm offers a convertible game system, but the firm's marketing director, Leonard Wisz, pointed out *Super Zaxxon* was a break from that system and was designed specifically to enable owners of *Zaxxon* games to convert those pieces to *Super Zaxxon*.

"Operators at the AMOA show were coming up and asking us if we were going to release *Super Zaxxon* in a



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Enquiries from established distributors are invited.

Play Meter's Equipment Poll

Arcade Locations

Twenty-Two of 47 videos (47%) with a response rate over ten percent have above average performances.

Top Videos

Street Locations

Eighteen of 42 videos (43%) with a response rate over ten percent have above average performances.

	Average No. Plays		
	Feb. 15	Feb. 1	Jan. 15
★ 1. Time Pilot/Centuri	1144	634	—
2. Joust/Williams	1013	1000	1024
★ 3. Front Line/Taito	985	938	—
★ 4. Q*bert/Gottlieb	978	1020	1068
5. Moon Patrol/Williams	892	904	868
★ 6. Millipede/Atari	866	854	—
7. Jungle Hunt/Taito	860	931	940
★ 8. Super Pac-Man/Bally	831	1057	—
★ 9. Subroc 3-D/Sega	809	872	900
10. Ms. Pac-Man/Midway	792	784	740
★ 11. Satan's Hollow/Bally	777	836	960
★ 12. BurgerTime/Data East/Bally	773	895	856
13. Donkey Kong Jr/Nintendo	765	776	784
14. Galaga/Midway	750	758	808
★ 15. Pengo/Sega	733	876	856

	Average No. Plays		
	Feb. 15	Feb. 1	Jan. 15
1. Joust/Williams	876	880	896
★ 2. Q*bert/Gottlieb	872	1000	—
★ 3. Moon Patrol/Williams	835	744	840
★ 4. Super Pac-Man/Bally	805	931	—
★ 5. BurgerTime/Data East/Bally	776	805	724
6. Jungle Hunt/Taito	770	782	884
7. Ms. Pac-Man/Midway	704	697	720
8. Donkey Kong Jr/Nintendo	700	702	804
9. Galaga/Midway	661	692	800
★ 10. Satan's Hollow/Bally	636	712	884

Provisionally Rated Videos (Above average earning games, with a response rate between 10-25%)

Arcade Locations

Provisional Ratings	Average No. Plays		
	Feb. 15	Feb. 1	Jan. 15
Pole Position/Atari	1114	1133	—
Mr. Do!/Universal	1044	1114	—
Baby Pac-Man/Bally	914	1080	—
Super Zaxxon/Sega	894	760	—
Monster Bash/Sega	822	—	—
Tac/Scan/Sega	813	840	868
Buck Rogers/Sega	750	—	—

Street Locations

Provisional Ratings	Average No. Plays		
	Feb. 15	Feb. 1	Jan. 15
Mr. Do!/Universal	1171	1033	—
Time Pilot/Centuri	1033	1000	—
Pole Position/Atari	943	—	—
Baby Pac-Man/Bally	877	—	—
Front Line/Taito	822	800	—
Subroc 3-D/Sega	760	866	—
Millipede/Atari	750	891	—
Pengo/Sega	642	828	916

NOTICE: The sole purpose of this survey is to determine on a regular basis the top performing games in the country. Any attempt to use the results of this survey for any other purpose is unauthorized, wrongful, and misleading.

★ Conditionally Rated—Weekly average based on less than 50% response rate.

Here are the top videos and top pinballs making above average nationwide. The dollar average number of plays are the averages reported to Play Meter through its operator survey. These averages are for games that are currently being marketed in the U.S. (no older than six months). Games with less than adequate responses (less than 50 percent) but with above average performances are so noted. Games not appearing either (1) did not generate over a 10 percent response rate or (2) did not register a performance above the national average. Operator/readers who would like to join the ever-growing numbers of readers participating currently in the survey, write: Play Meter, Equipment Poll, P.O. Box 24170, New Orleans 70184.

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conversion kit," Wisz said. "It didn't take a brick falling on us to figure out that's what the industry wanted."

The complete *Super Zaxxon* game will still be available from Sega distributors, Wisz said.

The *Super Zaxxon* conversion kit includes a printed circuit board, control panel and heavy duty controls, logo panel, and side graphics. It will sell for less than \$1,000.

Meanwhile Stern Electronics is offering *Lost Tomb* as a conversion.



"The conversion game...can be used to convert any raster scan video game," the company said. "However, our kit is specifically designed to convert, in 30 minutes, old cabinet style Stern games, including *Astro Invader*, *The End*, *Scramble*, *Super Cobra*, *Turtles*, and *Amidar*."

In addition to offering the "low price" conversion game, Stern will reimburse operators for the replaced boards from the converted Stern games.

"If you return to us a complete set of boards from the Stern game converted, including microprocessor and Eproms, we will send you a check for \$50," the company said.

Like Sega's *Super Zaxxon* conversion kit, Stern's *Lost Tomb* conversion is designed to be made simply and quickly by the operator.

Manufacturers' willingness to produce speed-up and conversion kits, or to license others to do so on their behalf, was first broadcast to the industry in October by the Amusement Game Manufacturers Association, which counts nearly every U.S. manu-

facturer among its ranks (*Play Meter*, Jan. 1, pg. 15).

AGE BAN WAITS FOR MESQUITE RULING

While communities nationwide wait for a Colorado court to decide whether or not an ordinance setting age restrictions on playing video games will be allowed to stand, prosecutors there wait for another ruling.

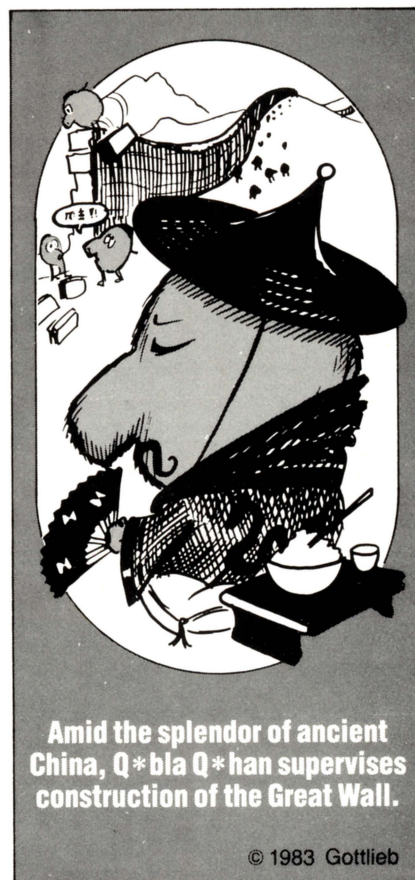
Dacono, Colorado city attorney Pete Goter said the city will give up on its efforts to require children under 16 to be accompanied by an adult when playing video games if the U.S. District Court in New Orleans does not issue a favorable judgment to Mesquite, Texas in its suit against Aladdin's Castle. That Dallas suburb wants the right to deny play to children less than 17 years old.

While many communities have written ordinances restricting play based on age, the Dacono case has achieved widespread notoriety because of the charges surrounding the issues.

The ordinance was formulated after the Dacono city police department revealed it had received complaints that two 12-year-old girls had extended sexual favors for money to play the games. Add to that "unresolved burglaries where coins were taken," and "reports of drug activity" near the grocery store where five of the town's 10 video games are located, and Dacono's 2,000 citizens had all the information they needed to believe such an ordinance was necessary.

No charges were filed in the sexual favors incident because no substantial evidence was found, Goter said. He also said there was no documentation of the theft or drug activity accusations, but the fact that coins were stolen when other valuables were left behind led authorities to "think it was done by kids."

Grocer Sam Shorez is the plaintiff in the Dacono case. He claims the ordinance was designed to discriminate against him because of his Iranian nationality and that harassment from the police caused him to lose business. He wants the court to award him \$500,000 in punitive and compensatory damages.



Amid the splendor of ancient China, Q*bla Q*han supervises construction of the Great Wall.

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Meanwhile, youngsters are playing without adult supervision in Dacono—just as they are playing in Mesquite—while the courts mull over the issues. But, Goter claimed, the ordinance is still affecting his community and influencing thought nationwide.

"Our ordinance made parents aware of the controversy over the games, not only here but nationally," he said. "Those who say we shouldn't have an ordinance base their objections on the fact that there are no other activities for the kids. Those complaints have led us to establish a parks and recreation district for Dacono, and we will soon be providing youngsters with recreational facilities for indoor and outdoor activities." •

FINAL HOUR VICTORY IN BOSTON

Video game operators in Boston won a final hour victory, December 30, saving more than 2,000 games from banishment.

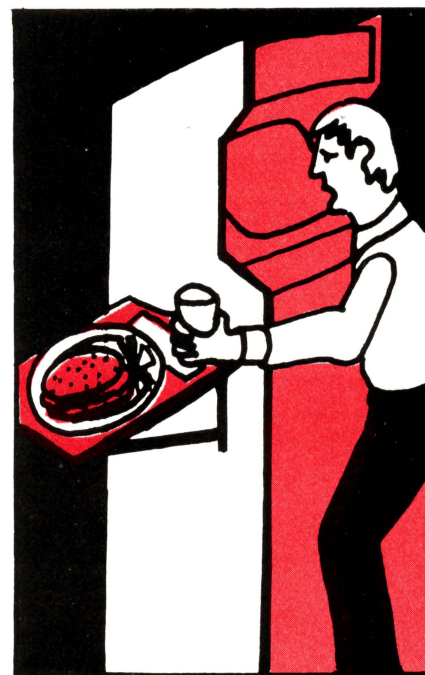
Suffolk Superior Court Judge Robert L. Steadman issued a temporary restraining order against the city prohibiting it from reclassifying any business that housed a video game as an arcade (or, in Massachusetts terminology, a "recreation center") as of January 1.

Since zoning restrictions in Boston allow for recreation centers only in business, industrial, and manufacturing areas, such reclassification would have meant that locations housing about 2,300 of the city's 4,000 video games would have had to apply for zoning variances to keep the machines operating.

In commenting on the case, Steadman indicated that putting a video game into a restaurant or bar did not make it an arcade, since the "focus remains on food and drink."

Some businesses, such as convenience stores, were not included in the ruling. But Barry Rosenthal, an attorney for the Coin Machine Industries Association of New England (CMIA) said the decision covers about 90 percent of the previously threatened video games.

The temporary restraining order was issued on behalf of five plaintiffs



(restaurant and bar owners) against the city's licensing board and Mayor Kevin H. White. A full trial on the issue is planned for late February.

The city's attempt to reclassify single game locations as recreation centers was proposed by White and Licensing Commissioner Joanne Anzalone last June, ostensibly to control the spread of games in the city.

In actuality, said Rosenthal, the city was attempting "to clear the one and two game operations off the street."

CMIA President Summer Segall agreed. He said that getting a zoning variance is such a complex and difficult procedure in Boston that most businesses would not have made the effort. In effect, Segall said, the city's measure would have wiped out most of the games and operators in Boston.

As Boston's operators were celebrating the victory, they received the news that the now famous case of the industry vs. Marshfield, Massachusetts had been taken up by the state's highest court. The Massachusetts Supreme Court now has three video game cases under consideration.

The Marshfield ordinance banning commercial video games in the city has been upheld by the state's courts through several appeals. Superior Court Judge Joseph Ford, who has issued rulings on the case twice, has indicated that he "is not persuaded that the video game bylaw is unconstitutional or in excess of the powers granted to the town by the home-rule

NEWS

amendment or the General Court."

Most recently however, just prior to the decision of the state Supreme Court to consider the matter, a state appellate court judge, while refusing to rule on the Marshfield ordinance, did state that the constitutionality of the law could not be upheld.

Rosenthal indicated that attorneys arguing the case for operators in the state Supreme Court have been challenging the constitutionality of state licensing laws and trying to establish First Amendment rights for video games.

AMOA CONSIDERS CIGARETTE OPS

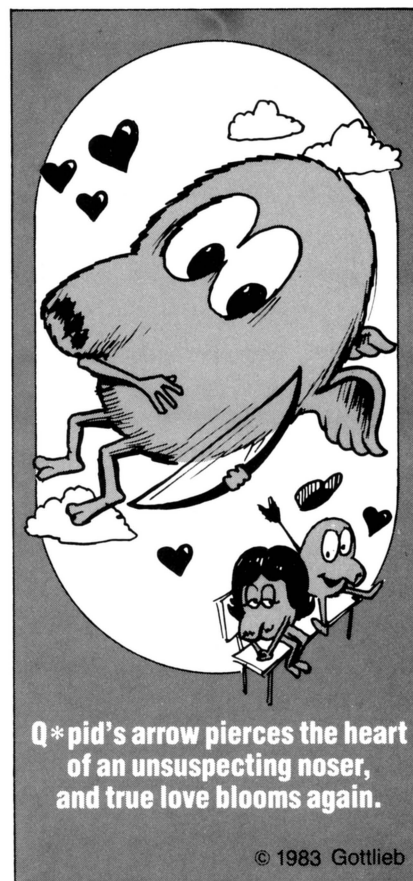
The Amusement and Music Operators Association is considering taking up the concerns of cigarette vendors. The

issue is being studied by a special AMOA committee and will be brought up to the board membership at its midyear meeting in April.

AMOA was influenced to consider the cigarette vendors' problems by members of the National Coin Machine Institute (NCMI), a recently organized association of 20 large-scale operators whose stated objective is to "make the public location operator as effective as he can possibly be in meeting and developing solutions to the problems at the local level in his community."

Prior to the November AMOA board meeting, NCMI officers proposed the new association be included as a division in the AMOA. AMOA Executive Director Leo Droste told *Play Meter* the NCMI proposal would not be accepted by AMOA and that "many of the things they are proposing we are already doing."

"It is my understanding that NCMI was formed to address cigarette vendors' problems which weren't being attended to," Droste noted. He said the AMOA charter would be examined as to the legality of AMOA



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including the additional category of street operators.

Arthur Fein, president of the Wainrite Group and one of the four co-founders of the NCMI, told *Play Meter* his association was formed because AMOA "had not been responsive to street operations." He said the AMOA's 48-member board is too large to act efficiently and that NCMI was formed to react quickly to help operators fight adverse legislation at the local level.

"National associations in the industry are inhibited by charter restrictions and limited budgets to devote time, attention, and personal involvement to those local problems," he told operators at an NCMI luncheon in Chicago during the recent AMOA convention.

Droste said it was up to the operators in local areas to decide what is best for them. He said AMOA does not have the resources to become involved in specific local matters unless they are of national interest.

AMOA President Wesley Lawson agreed with Droste. "Sending people out to fight brushfires is not feasible at all," he said. "We can give legal advice and send model ordinances, but the operators have to get the job done themselves."

Fein said that NCMI is effective by sending the nearest institute member to a troubled community. When the New Hyde Park, New York Town Board issued a restrictive ordinance that would have put operators out of business there, an NCMI member from a nearby community helped organize operators and bar owners who answered the town board's concerns with a proposed ordinance of their own.

At its November luncheon, the NCMI announced its "1983 action program," which includes seeking increased minting and distribution of the dollar coin, fighting jukebox copyright royalty fees, repealing the 8 cent increase in the federal excise tax on cigarettes, fighting unfair legislation, and strengthening state and local operators' associations.

Fein said the NCMI is not interested in competing with the AMOA for members. In fact, the majority of NCMI charter members are also members of AMOA.

"We're interested in doubling efforts, not duplicating them," he said. "We would like to work together with the AMOA."

INFRINGER GETS JAIL TERM

For the first time, a video game pirate has been sentenced to a prison term. On December 9, Larry Kruckenberg of International Vending Company and International Video Games Inc.—both of Orlando, Florida—was found guilty of criminal contempt for selling counterfeit *Pac-Man* games and given a six-month prison sentence.

According to Midway attorney Sidney Katz, Kruckenberg had been permanently enjoined from selling counterfeit *Pac-Man* games by the U.S. District Court in Orlando, February 17, 1982.

But on November 3, after waiving a previously requested jury trial, Kruckenberg subjected himself to the



judgment of the court, claiming he had only been enjoined from selling counterfeit *Pac-Man*, not *Ms. Pac-Man* videos.

Kruckenbergs has not served the jail sentence, Katz said, but is appealing the ruling.

Meanwhile, Kruckenbergs has been unavailable for comment. His firms went bankrupt, Katz said, and several of his customers' attorneys have contacted Midway for information about Kruckenbergs' whereabouts. They claim he did not deliver goods he had sold.

GROSS RECEIPTS TAX UNENFORCEABLE

Some cities that have imposed gross receipts taxes on video game operators are withdrawing the measures in exchange for flat rate taxes or license fees.

Thomas Woodring, a controller for Williamsport, Pennsylvania, told *Play Meter* that city's long standing 10 percent gross receipts tax on amusements was replaced by a flat tax of \$100 because the city was having difficulty collecting the initial tax. The gross receipts tax had been in place since 1967.

"We let them go for years at their

own discretion," he complained, "but the owners of the games just weren't filing reports with the tax office. In order to find out what they're making, we'd have to go watch them empty the machines at two o'clock in the morning."

The amusement tax, which will apply to all forms of amusements provided for Williamsport audiences—dances, plays, athletic events, concerts, as well as coin-op games—will be easier to collect, said Woodring, as the result of a citywide inventory of games he completed. Woodring found 477 coin-op games in Williamsport. The tax burden will be the responsibility of the operators.

In addition to collecting the tax, Woodring said city officials are tracking down operators who had not paid the gross receipts tax "for years." Woodring said the city could gather "a very close estimate, almost to the penny" of what operators owed. He said the city would gather its information "by word of mouth on the streets."

In Baltimore, operators will pay the city an estimated \$1.3 million in 1983 as the result of a new license fee of \$300 per game. The license fee replaces a previous \$150 per game fee and a 1 percent gross receipts tax. It was imposed in place of a 10 percent gross receipts tax that had been recommended by Baltimore Mayor William Donald Schaefer.

The gross receipts tax increase was defeated when operators and bar owners protested the measure, arguing collecting the tax would necessitate the city hiring additional tax collectors and auditors.

Later, Schaefer tried to reimpose the 1 percent tax, but the City Council denied his efforts by a 10-7 vote November 29. Schaefer argued the tax would raise an additional \$259,000 for Baltimore in 1983.

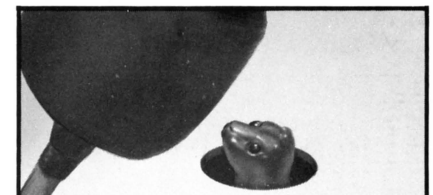
KANSAS STRUGGLES WITH "GRAY AREAS"

A September ruling by a Kansas judge that video card games do not violate gambling laws in that state has led to "extreme problems" there, according to Detective Jerry Fiscus of the Kansas City, Kansas, police department.



Billy the Q*id, a black sheep of the noser family, ransacks the banks of the wild west.

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Those problems were revealed when an undercover investigation led to raids in four Kansas counties December 16 resulting in the arrests of 12 persons and the confiscation of the same number of machines.

The raids, resulting from the efforts of agents of the attorney general and the Kansas Bureau of Investigation, netted four machines and four arrests from three Wichita clubs, one machine and arrest from a Wyandotte County club, six arrests and six machines from four Leavenworth clubs, and one arrest and game in Galena.

Agents conducting the investigation said they had received cash payments or reduced bar tabs as a result of winning replays on the games.

Previously Judge David Calvert of Sedgewick County ruled the games of themselves were not gambling devices because they did not pay off in "things of value." That ruling came after Kansas Attorney General Robert Stephan issued an opinion that the games are gambling devices and had ordered state officials to confiscate the games.

Calvert's ruling, made after he compared video card games with a Las Vegas slot machine, is currently being appealed by Stephan.

The games were allowed to be confiscated because Calvert's ruling does not protect machines that officers can prove are used in gambling.

Fiscus said police in Kansas City, Kansas, had confiscated 13 video card games there since February 1982. He said the games were very popular and took in up to \$2,000 per week.

"Walk into any private club, and you will find them," he said. "I consider it an extreme problem."

BALLY, IGT SETTLE SUIT

Si Redd won't be able to keep Bally's video card games out of Las Vegas for long, but the \$2.5 million he received to settle his disagreement with Bally should ease the pain.

Redd's International Game Technology filed suit against Bally in March, citing various agreements between Redd and Bally made in 1970 when Redd was an employee of the Bally Nevada subsidiary and

claiming rights to all Bally/Midway videos produced since 1975.

In the course of the suit's events, IGT dropped its claim to a percentage of the profits from Bally's amusement games, relegating its effort to keeping Bally's new line of video card games out of Las Vegas.

"We dropped the video games issue in an amended complaint," confirmed Ray Pike, IGT lawyer.

The settlement asserts Bally's right to continue to develop, manufacture, and sell video lottery machines and video slot machines. It prohibits Bally from marketing video card games until May 31 of this year, and in Clark County (where Las Vegas is located), until April 30, 1984.

Bally said it entered into the settlement to "avoid the further expense and inconvenience of litigation." The company denied any "wrongdoing or liability" and said it agreed to the settlement "in order to clarify its unrestricted rights in the lottery market."

Bally had previously been preliminarily enjoined from selling poker and keno video games by the Nevada court, but the company said it had sold no such games prior to that injunction and that the injunction did not materially affect its marketing plans. Bally said it would begin sales of the machines when the agreed upon dates allowed.

TENNESSEE CONSIDERS COIN-OP TAX

Saying video game operators are making "astounding" amounts of money, Tennessee legislators are throwing their weight behind a proposal to charge each operator a \$1,500 annual license fee and tax each game \$200 per year.

The proposal signifies a renewal of the same effort last year that died when members of the Amusement and Music Operators of Tennessee contacted legislators to raise objections to it. They were supported by a petition campaign conducted by operators and location owners who garnered 200,000 signatures against the bill during the eight-day campaign.

Last year's proposal was drafted by Governor Lamar Alexander's administration, and this year the proposal will have the added support of the state finance commissioner who is looking for means to combat shortages in available revenues.

Legislative aide Billy Stair researched the revenue potential of taxing the games and estimated the state could earn \$8.1 million by charging each of 680 operators a \$1,000 fee and taxing each of the 22,500 machines \$200.

Some proponents of the issue would like to see the money earmarked for the state's parks and recreational facilities, but Governor Alexander has indicated he will fight any attempt to earmark the funds. Rather, he intends to deposit the collections into the general fund.

AMOT has already conducted meetings to organize operator opposition to the proposal, said Tom Jackson, executive director of AMOT.

Tennessee operators are particularly concerned about the \$200 tax because of a state regulation that allows counties and cities to impose taxes on games of amounts up to the dollar figure assessed by the state.

And the cities are already anxious to tax amusements, evidenced by the recent move of Memphis to impose \$36 per year fees on video games, jukeboxes, pool tables, and pinballs. Operators in Memphis filed suit against the city contending the charges were taxes and as such inconsistent with what the state constitution permits, but they lost their case when the city claimed it needed the money as fees to "control crowds and noise" and to generally police the industry.

GAME MAKERS COMPLY WITH FCC

When signal emissions from coin-op video games were blamed for blocking fire alerts in Milford, Delaware, the city manager took his complaints to the Federal Communications Commission.

Two videos were removed from the Milford firehouse after it was determined they were the cause of the radio interference, but later, when

NEWS

interference continued, firefighters discovered emissions from games in an arcade behind the firehouse were also creating problems.

Because of radio and TV signal interference, and partly as a result of the recent classification by the FCC of video games as Class A computing devices, manufacturers are building in safeguards against the problems.

Games manufactured after December 1, 1982 will bear a label indicating the manufacturer has complied with the FCC regulation. The required new label reads: "This equipment complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference." The label requirement applies to both domestic and imported machines.

The responsibility for meeting the signal emissions requirements is squarely on the shoulders of the manufacturers, said Tom Hart of Williams Electronics who makes sure that company's games comply with FCC stan-

dards. But the operator could bear the brunt of the loss if the game is turned off or removed from a location because of interference. In that case, Hart said, the operator should contact the manufacturer for changes to be made to the game.

The problem is not widespread. Fewer than 20 complaints have been registered with the FCC about video games causing signal interference in the last two years. Still, manufacturers are concerned that emissions do not interfere.

"One instance of interference of an emergency signal could be too much," Hart warned.

To comply with the newly imposed regulations, video game makers have made alterations in their assembly procedures. Atari, for example, is enclosing PC boards in a metal cage in its new games.

In part, manufacturers are taking steps to ensure games don't emit interfering signals because they want to maintain their Class A standing with the FCC. If they fail to police themselves well enough, the games could be reclassified as B devices and signal emission testing would have to be



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THE CALENDAR

February 4—6

Music Operators of Minnesota, Annual State Team 8 Ball Pool Tournament, Kahler Hotel, Rochester

February 18—20

Music Operators of Minnesota, Annual State Convention, Holiday Inn Downtown, Minneapolis

February 20—22

South Carolina Coin Operators Association Annual Meeting and Trade Show, Holiday Inn—City Center—Columbia

March 16—17

Nihon Amusement-Machine Operator's Association, second amusement expo, Shinjuku N.S. Building, near Keio Plaza Hotel, Shinjuku, Tokyo.

March 23—25

Coin-op '83, The Irish Amusement Trades Exhibition, Leopardstown Racecourse, Dublin

March 25—27

Amusement Operators Expo '83,

O'Hare Exhibition Center, Chicago

April 7—10

FAVA Convention, Florida Amusement and Vending Association, Curtis-Hixon Convention Center, Tampa, Florida

April 14—23

Milan Fair, Italy (For information, contact Fiera di Milano, Largo Domodossola, No. 1 20145, Milan, Italy. Telex: 331-360)

April 30—May 1

PAMMA (Pennsylvania Amusement and Music Machine Association) Exposition, Expo Center, Monroeville, Pennsylvania

May 20—22

Music and Amusement Association of New York City Annual Convention, Concord Hotel, Kiamesha Lake, New York

June 16—18

OMAA's 1983 Exposition of Music and Games, Hyatt Regency, Columbus

NEWS

certified under the watchful eyes of FCC bureaucrats. •

AGMA TAKES GAMES TO OFFICIALS

The Amusement Game Manufacturers Association completed its three-step 1982 governmental relations program with an appearance at the National League of Cities convention in Los Angeles in December.

In cooperation with distributors and operators, AGMA sponsored a booth stocked with video games set for free play by city officials from around the country.

Earlier in 1982, AGMA set up games for attendees of the National Conference of State Legislatures and the National Association of Counties Convention. The manufacturers association attended the three conferences to provide the industry opportunities to present its views to decision makers from all levels of government administration.

AGMA Executive Director Glen Braswell indicated the three days of discussions with city officials at the League convention revealed "certain trends among the cities.

"First of all," he said, "there is a great search by governmental officials, at all levels, for new sources of revenue. Video games will be a prime target in 1983.

"Secondly, many city officials are of the opinion that games should not be banned but simply be regulated for purposes of control. In this regard, industry officials found the city decision makers to be surprised upon learning that the amusement game industry is not opposed to regulations *per se*, but only opposed to those that are unreasonable, unbearably restrictive, and confiscatory in their nature."

Braswell, who said the League of Cities convention was the most successful such event attended by AGMA in 1982, indicated government officials generally had positive attitudes about the coin-op amusement industry, but that those attitudes "will become wasted if we, as an industry, do not speak up for ourselves, become politically active, and take steps to capture, cultivate, and prolong our basic friendships in government." •



Bally Midwest has become a **Taito America** distributor for Illinois, Indiana, Michigan, Missouri, and Wisconsin. Meeting to celebrate the agreement are (left to right) Ed Pellegrini, Bally Midwest sales manager; Jerry Marcus; Jack H. Mittel, president of Taito America; and Mike Von Kennel, Taito America sales manager.

Rave reviews for 1983's hottest game!

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- Glenn H. Grundtisch, Holiday Twin Rinks, Buffalo, N.Y.

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- Donald E. Singer, Cleveland Coin, Columbus, Ohio

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- Amrite Sales Co., Scottsdale, AZ.

“New hockey game CHEXX with dynamic hockey arena sounds sure to be a winner!”

- Canadian Coin Box Magazine

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- Putt-Putt Amusement Center, Williamsville, N.Y.

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Business Myth of the Month

The Myth:

"Our machines always pay for themselves sooner or later."

By Charles C. Ross

This myth arises from the fact that so many operators study their revenues only. They assume that a machine may be a low earner, but sooner or later the total revenues less the payout to the location owner will equal the total costs of the machine.

The operator has overlooked the fact that he has costs in operating the location and costs involved in operating the company as a whole.

Location costs are all those costs associated with running the location and usually include collection time, travel time to the location, as well as the depreciation on the equipment at the location.

Then there is the administrative costs or overhead cost of running your amusement operation. These are such costs as telephone expenses, owners' salaries, bookkeeping and accounting fees, as well as all other costs associated with running your business that cannot be directly charged to a particular location.

The unfortunate fact is that location costs and the administrative or overhead costs can cause a machine never to pay for itself. In other words, when you isolate the costs associated with running your company, many machines have been a mistake from Day One when you purchased them.

Obviously when you discover that you have made an equipment purchasing error, your immediate reaction is that you should be able to sell the machine. This is, of course, a good plan. However, today you may have a problem moving the piece as you are not the only one to discover that the machine is not going to be on the *Play Meter* Equipment Poll in the top 10.

Any alternatives?

So what alternative courses of action do you have? Unfortunately there are really no good alternative courses of action. The best thing to do

is to dispose of the machine. The only other thing you can do is try to keep the machine at locations where the location costs are low.

One strategy usually employed by operators is to rotate the piece of equipment very often. This strategy may or may not be good. Oftentimes, the cost of rotation will more than offset the increased revenues.

There is a good strategy to employ and that is to try to keep your administrative costs low. Many times the difference between a machine someday paying for itself is the administrative costs. Administrative costs can also be the difference in your company making money and not making money. Your profits will improve dollar for dollar when you shave off administrative costs. In these times when every dollar counts, every operator should consider how his administrative costs can be cut.

So the next time you make a mistake and purchase a machine that turns out to be a low earner, don't try to rationalize the purchase by saying, "Someday this machine will pay for itself." Study the situation and if it looks like the machine will never pay for itself in terms of net income, then dispose of it quickly. After all, as we all know, an amusement machine is worth more today than it is tomorrow. •

TABLE I

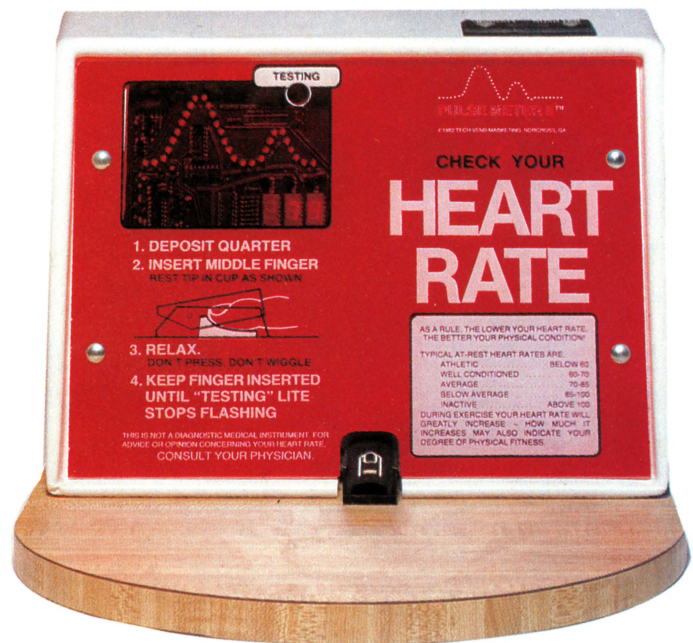
Machines' revenues per month to us	\$ 150
Cost of machine	\$2,700
Machine payoff in	18 months

THE TRUE PICTURE

Machines' revenues to us	\$150
Service Cost	\$ 25
Depreciation	125
Administrative cost	90
Total Cost	240
Net Loss	(\$ 90)

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The all-new HEART RATE machine is already bringing in the profits at retail outlets of all kinds: supermarkets, discount stores, health clubs and spas, restaurants, convenience stores, movie theaters and arcades.

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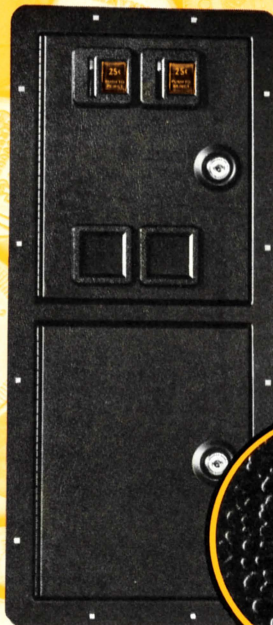
A Classy New Face for the Coin Mech Family



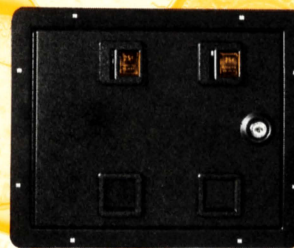
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LARGE DOUBLE DOOR



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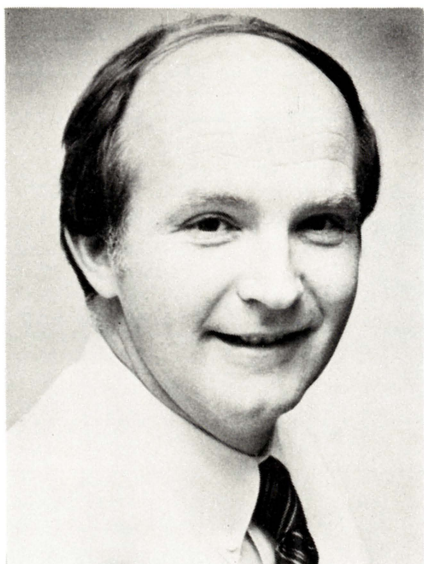
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Raymond J. Christie Jr. has been appointed manager of the Baltimore branch of **Banner Specialty Company** of Jenkintown, Pennsylvania.

Christie, a native of the Mayfair section of Philadelphia, also serves as treasurer for the Banner Corporation and has been associated with the company for the last nine years.



Fred McCord has been appointed director of technical operations for **Chuck E. Cheese Pizza Time Theatre**. McCord comes to Pizza Time Theatre from Atari, where he headed up the field service department for almost eight years.

He is best known in the industry for his role in starting the Atari service schools and developing their technical training programs. In his new position, he will implement similar programs and support services within the Pizza Time organization.

SNAPSHOTS



Children's hospitals and organizations were among the recipients of **Atari** video games given away this holiday season. More than 400 free play games were delivered to a variety of San Francisco Bay Area and Baltimore, Maryland, charities.



Phred Wood of Port Clinton, Ohio, receives first place awards from **Miller Brewing Company President Bill Howell** for his victory at the **National Licensed Beverage Association Lite Masters Pool Tournament** at the association's convention in Reno. Wood was the best of 112 players who qualified for the finals of the 8-ball tournament played on Valley's Cougar Cheyenne tables.

Wood received the Masters green blazer and a McDermott custom pool cue for his final round victory over former professional bowler Jerry Silvis.

HEADLINERS

Stern Electronics announced a price reduction on its video games of 15 to 20 percent. The reductions on the prices it charges distributors will be made on all current games as well as new games "we will be shortly releasing," the company said.

.....

Terence Cunningham has decided to move the dates and location of his **Pacific Amusement Operators Show**. Cunningham, who is trying to offer a major industry show on the West Coast, said his show will take place April 22-24 at the Disneyland Hotel in Anaheim. That's the same week the **National Automatic Merchants Association** has scheduled its show for Anaheim.

.....

Bally/Midway was awarded \$545,000 by the U.S. District Court in Brooklyn when the court found **Fable Toy Company** guilty of infringing Midway's rights relating to the *Pac-Man* logo. Fable Toy was producing stuffed toys in the *Pac-Man* image without Midway's consent. The jury trial was presided over by Judge Nickerson, the same judge who presided over the now famous *Stern vs. Kaufman* case in that court.

.....

National City, California, operators will pay an annual fee of \$55 on each video game they place there, but not because of the lack of effort by the town's mayor on their behalf. Mayor Kile Morgan refused to go along with the proposal, which was passed over his objections by a 4-2 vote, calling the idea "ridiculous."

"I'm not a-gonna vote for this," he said, "because this taxes the people of National City. What you're doing is taxing the kids."

Morgan at first refused to sign the law but agreed to compromise his position when the city attorney told him he must sign.

"I even hate to sign this," he said.

"Can I let Mr. Vice Mayor sign this? I hate to sign this."

According to the city's finance department, approximately 490 video games are operating in about 70 businesses in National City.

.....

"I've learned a very expensive lesson," said Herbert Espino. "I'll never try to do business in a small town again."

Espino was still reeling from a blow dealt by the city of West Miami that gave him a "now you can, now you can't" decision on opening an arcade there.

The "Espino matter," as the West Miami City Commission called it, evolved when City Clerk William Grover told Espino to go ahead with his plans for the arcade, that there would be no problem in acquiring the proper licensing.

But then Grover retired and his successor sent Espino to the city's zoning board. The zoning board said no, so did the commissioner's office—after Espino spent more than \$7,000 renovating his building.

To settle the matter, the city paid Espino \$2,000.

"I had to accept the \$2,000," said an exasperated Espino. "Legal fees would cost me more than the \$7,500 I want to get back."

.....

When residents near Sheepshead Bay bowling lanes in Brooklyn, New York, showed up at a public hearing to complain about the bowling alley's intentions to add a game room to its recreational facilities, owner Anthony Salvati took matters into his own hands. He met with the disgruntled citizens and mapped out a series of conditions he would abide by to assure his neighbors the game room wouldn't turn into a teenage hangout.

Among other conditions, Salvati agreed to hire a full-time security guard, add lighting around the outside of the building, and enclose the

entire game room by glass panels.

.....

The council in High Bridge, New Jersey, has set its license fees at a new high, high enough to discourage anyone thinking about providing an arcade for the town. For each game more than six in any location, the operator will pay a \$1,000 annual fee.

.....

World Wide Distributors celebrated two branch office openings in December. The Detroit branch moved into its new facilities in Royal Oak to the applause of 200 operators and guests. Then, the World Wide crew moved onto Grand Rapids where it entertained 250 operators and service technicians at the opening of a new location there.

.....

Taito America has added **Brady Distributing** and **Bally Midwest** to its distributor network. Brady serves North Carolina, South Carolina, and Virginia. Bally Midwest will distribute Taito America games in Illinois, Indiana, Michigan, Missouri, and Wisconsin.

.....

Noah Anglin, who was a president of Exidy and a vice president of engineering at Atari, has started a new company. Funded under a research and development partnership, **Simutrek Inc.**, located in Hayward, California, will develop hardware and software graphics for video games.

.....

Photar Industries is a new company that will make use of the abundance of electronics specialists on Florida's "Space Coast." The company, headed by **David Hacker**, intends to produce technologically advanced video games to satisfy "the need for new innovative ideas in the video game market."



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Side Trak	300	Magical Spot	500
Canyon Bomber	300	UniWars	650
Triple Attack	350	Spectar	650
StarHawk	350	Space Firebird	750
Sun Dance	350	New York, New York	750
Magical Spot	500	Space Odyssey	750
Spectar (Cab.)	600	Polaris	750
Colony 7	750	Stratovox	750
Venture	750	Space Fury	995
Moon Wars	750	Qix	995

PINBALLS

Coney Island	500	Split Second	995	Elektra	1295
Torch	500	Viper	995	Iron Maiden	1295
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Allen Poker	750	Hercules	995	Devil's Dare	1395
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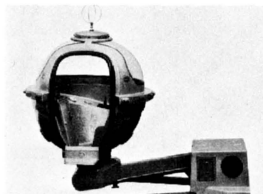
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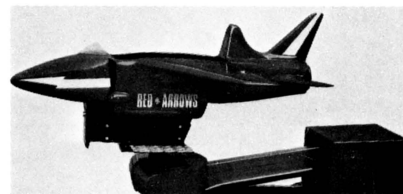
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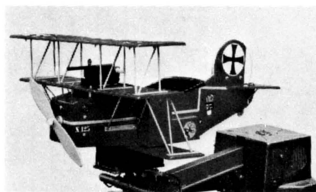
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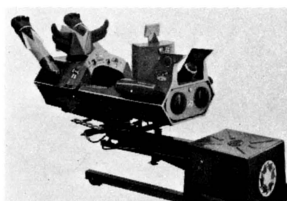
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Wesley Lawson and son Manley are surrounded by reminders of their participation in community and industry organizations.

AMOA's man of the year

By Mike Shaw

When *Play Meter* first interviewed Wesley Lawson during the summer of '77, we characterized him as a "joiner," a man who belonged to and believed in a long list of associations, boards, clubs—Kiwanis, American Legion, Salvation Army.

That inclination twice led him to the office of president of the Florida Amusement Vending Association and now has culminated in his appointment as president of the Amusement and Music Operators Association (AMOA), which counts more than 3,000 members from the coin-operated games and jukebox industry.

Lawson's newest title is appropriate considering his background. He has operated Lawson Music Company in central Florida (Winter Haven) for 40 years, expanding to cover 11 counties and 88 municipalities with more than 1,200 coin-op pieces.

But maybe even more importantly, Lawson's involvement with local, state, and national organizations evidences his genuine concern for his fellow man. In his role as president of

AMOA, that characteristic will be his most important tool in accomplishing the goals he has established for the one-year term.

A president of AMOA is not a policy maker; policies are formulated and voted on by a 48-member board. Rather, an AMOA president serves, primarily, as a representative of its policies and activities to its own members. As that kind of ambassador, Lawson is well equipped with experience and an adamant determination to communicate the lessons of a lifetime to those who need the association's help in solving the complex problems of what has become such a ubiquitous industry.

Fundamental beliefs

If there is any reservation of Lawson's ability to make an important contribution to his industry in 1983, it is that he is a fundamentalist, an "old-timer," a man whose roots are in the jukebox, not the video game.

"The jukebox is still the backbone of the business," Lawson will say. And he

backs his belief by maintaining a stable of more than 400 jukes and a firm grip on the NSM distributorship in Florida.

There is even a note of disgust in his voice and in the comments of Lawson Music employees when they talk of the waste associated with video games.

"We just throw our duds in the trash," he said, and an employee chimed in, "Do you want to see our video game junk pile?"

Lawson, it is obvious, does not find his fundamentalism a drawback. His controlled, conservative approach to buying and locating coin-op amusements has provided him with a consistent growth pattern for Lawson Music Company. It has saved him from some of the mistakes that have brought doom and destruction to the business of operators who loaded up on the newest, hottest videos in an attempt to satisfy the whimsy of every location they could garner.

Instead of examining new product releases, Lawson studied his own earnings records. He compiled averages and then set minimums. He moved equipment when it wasn't pro-



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ducing at a specific location, and he scratched locations producing less than profitable takes. He never deviated from the traditional 50/50 commission split, and he found that split was also appropriate when it came to licensing fees and local taxes.

"And above all, we built our business by providing good service," he affirmed.

Lawson wants to unveil his methodology during his realm. He will speak at state association meetings throughout the nation in 1983, encouraging operators to keep good records, to cultivate the friendship of their competitors, and to involve themselves in community activities and industry associations.

Contemporary businessman

While it is one thing to question how contemporary Lawson's view of the coin-op business might be, it is another to recognize that he has applied some of the industry's recent developments to his own routes.

He is an avowed devotee of computers. His son Manley, who is working his way into his father's position after 11 years as an IBM salesman, convinced his dad a computer would enable him to keep important information about his machines and locations at his fingertips. Together, they developed a software program tailored to the family business, purchased a hardware system to handle it, and began working with the kind of fresh information it had previously taken six weeks or so to compile. The computer has enabled him to avoid the pitfalls many jukebox operators have suffered over recent years and has helped him find an increase in jukebox revenues in the last year.

Satisfied with AMOA

Lawson bristles at the critics of AMOA. He feels that those who are disenchanted with AMOA simply don't know it.

"They haven't been involved," he said. "Those of us who are part of it are satisfied with it. There is tremendous participation and dedication by the board members, all of whom must pay their own expenses to get to meetings," Lawson said bragging on his contemporaries.

In addition to the annual AMOA industry show, Lawson pointed to accomplishments like the association's Notre Dame seminars, its legal advice and model ordinance work, and its efforts over the last 25 years to keep jukebox copyright royalty fees low.

And he predicted that in 1983, AMOA will be successful in combating situations that will enable it to offer its group health insurance program to operators in all 50 states, and it will propose some new legislation to fight unfair copyright royalty fees.

As Lawson sees it, it's not what the operators' association can do for the operation, but what the operator can do for himself that is the important message of his office.

"We need more public relations effort," he said. "We need to convince operators to work for positive publicity in their communities and to build good relations with their local and state governments."

Lawson has fought battles for favorable legislation in his own state. It was, he noted, firming up good relations with Florida's liquor control agency that kept it from classifying pool tables as gambling devices. Confronting state officials face to face cleared away old prejudices against coin operators, replacing it with the confidence that operators could police themselves.

"Most authorities are not trying to regulate us out of business," he commented. "They are just trying to find a way to deal with bad locations."

Objects to gray areas

Lawson's belief in the essentiality of good community relations has led him to a stance against gray area games, video games of chance that have been a subject of debate for the AMOA board.

"I wish no one operated gray areas," he said. "I'd like to get rid of them."

Yet the AMOA has refused to keep them out of its annual shows. In fact, Lawson said "after years of hassling over gambling equipment at the show, we opened up to it."

Although he sees gray area games as "one more image problem," he admits the fight against their inclusion in the AMOA show is futile. "Many operators operate the devices to stay competitive," he said. "Many of them wish they didn't have to."

Wesley Lawson is a man of principles and beliefs that were formulated long before the nation's cultural revolution led to the methods and morals of the '80s. He is a family man running a family business with caution and scrutinizing consistency. His fundamental approach to business still works, and therein lies his value as standard bearer for the operators' association. It will be his contribution to improving the industry's lot in 1983.

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Handbook details arcade's business record, history

By Gerald A. Walford

To facilitate operations and provide an accurate understanding on the development of our arcade, I developed the *Outer Limits Handbook*. This book is extremely useful to us in providing a detailed record and history of the arcade. Also, it gives us information on predicting trends, external influences, profits, procedures, and policies, etc.

The *Outer Limits Handbook* consists of a loose-leaf binder with five divisions:

1. Duties

2. The weekly charts
3. Machine repair
4. Messages
5. Weekly income graph

Duties

The duties of our attendants are outlined in this section. If at any time an attendant is unsure of procedure or policy, the book can be readily checked.

I will only list a sample of the headings:

- Important phone numbers
- Hours
- Chart explanations

- Dress and conduct
- Promotions
- Cash procedures
- Signs
- Robberies
- Cleaning
- Alarm
- Telephone
- Repair
- Messages
- Customer Relations

- "Machine owes me a quarter."
- Behavior of customers
- Loitering

DAY-DATE		TH 13	FRI 14	SAT 15	SUN 16	MON 17	TUE 18	WED 19	TOTAL								
HOUR		METER	HR	ATT	METER	HR	ATT	METER	HR	ATT	METER	HR	ATT	METER	HR	ATT	TOTAL
OUTER LIMITS	8																
	9																
	10																
	11	11406	0														
	12	11414	8	5	number of people in arcade at 12:00 noon												
	1	11427	13	3													
	2	11448	21	11	hourly meter count												
	3	11462	14	13													
	4	11487	25	13													
	5	11519	32	32													
	6	11541	22	19													
	7	11569	28	16													
8	11586	17	19														
9	11597	11	6														
10	11618	21	5														
11				meter reading end of day													
WEEKLY CHART	12																
	1	Football ← anything special to the day															
	2	Playoffs															
	3	snow storm															
	4	attendance total															
ATT. TOTAL		142														1216	
METER TOTAL		212														1874	
ITT. PROJ. INC.		302														2588	
METER PROJ. INC.		265														2539	
WEATHER		CLOUDY 0°														average 2559	
ATT. = ATTENDANCE HR = HOUR TOTAL METER PROJ = PROJECTED																	
ATT. RATIO = 2.12 METER RATIO = 1.38 ACTUAL INCOME 2590																	

Chart I

Weekly Chart

This is the basis of the handbook. Chart I is a sample chart filled out for one day only. At the top is the day and date—Thursday 13 (TH 13). On the side of this column are the hours of the day from 8 a.m. to 2 a.m.

Under 'meter' the coin machine's reading (\$1 changer) is recorded at the opening of the day. In this case 11406. At 10 p.m. closing, the meter read 11618. The "HR" is the meter count, or the number of dollars into the coin machine for the hour (e.g., at 12 noon, \$8 went into the coin machine).

'ATT' is for attendance which means that on the hour a count of the number of people in the arcade is taken (e.g., at 12 noon, 5 people were in the arcade; e.g., at 5 p.m., \$32 entered the coin machine between 4 p.m. and 5 p.m. and 32 people were present).

Farther down the column, special situations are recorded. In this case the NFL playoffs and a snowstorm occurred on the 13th. This is used when analyzing external influences on the play of the machines.

Att. Total: Addition of all the attendance hourly totals. In this case it is 142.

Meter Total: Subtract the opening total from the closing total for the day. This one is 212.

Att. Proj. Inc.: This is the attendance projected income. This is determined by multiplying the attendance by the attendance ratio (Att. Ratio) from the previous week (e.g., $142 \times 2.13 = 302.4$ or \$302). Attendance ratio will be explained later. This figure 302 estimates that based on attendance, \$302 was taken into the game machines.

Meter Proj. Inc.: Meter projected income. This is $212 \times$ the meter ratio of the previous week (e.g., $212 \times 1.25 = 265$). This means that according to the meter on the coin machine, \$265 should have gone into the game machines.

[Note: We are dealing in percentages and estimates, and often on a small sample there can be some discrepancy between meter and attendance totals. Over the week, or even longer, the larger sample will bring the totals closer together.]

To the far right of the page we add the totals of the attendance and meter and the attendance income and meter incomes. In our sample:

Attendance total for the week	1216
Meter total for the week	1874
Attendance projected income for the week	2588

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DATE	MACHINE - PROBLEM	TIME CALL	TIME FIXED	MECH- ANIC
10/17	CENTIPEDE - not firing	11:00	2:00	AL

Chart II

DATE	TIME	FOR	FROM	MESSAGE

Chart III

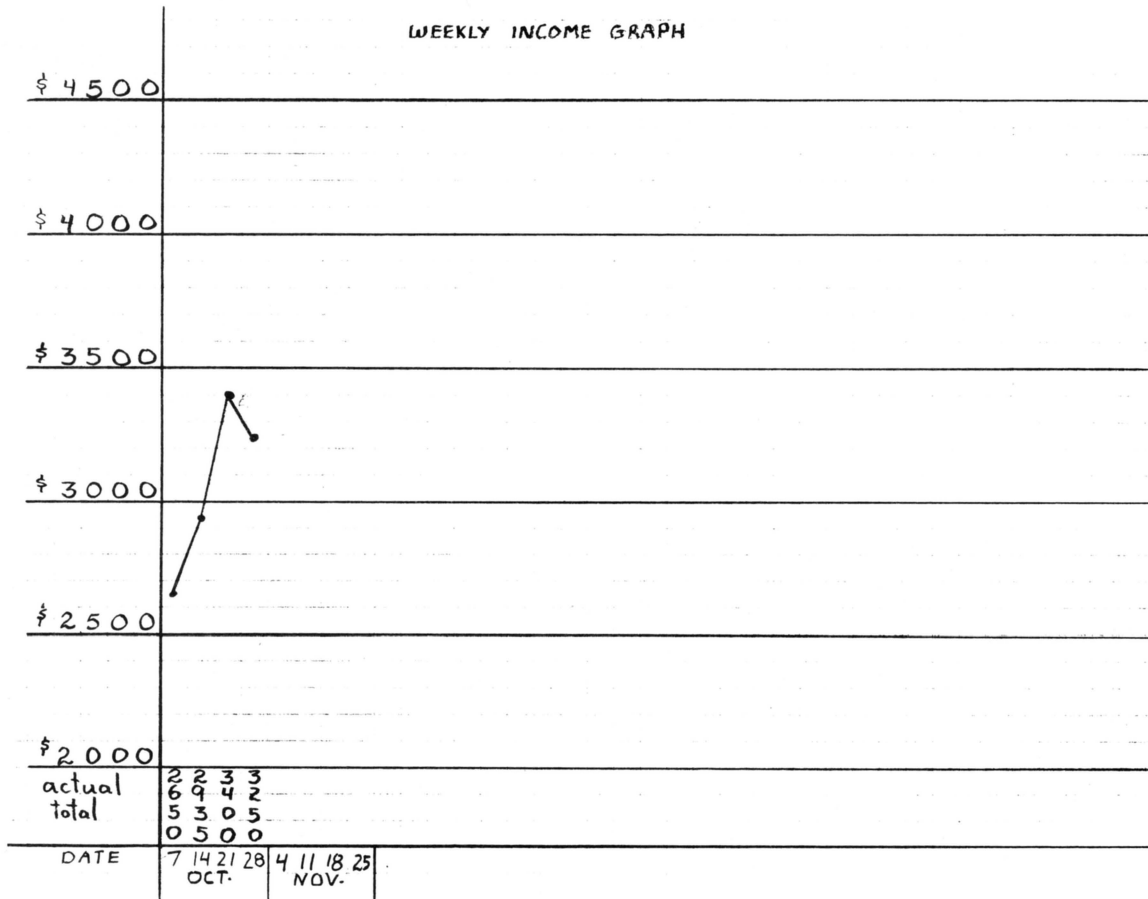


Chart IV

Meter projected income	2539
for the week	2559
Average	2559

The average is $2588 + 2530 \div 2 = 2559$.
The weekly estimate is \$2,559.

To determine the attendance ratio, divide the actual income for the week by the meter total (1216) (e.g., $2590 \div 1216 = 2.12$). The same applies for the meter ratio. Divide the actual income by the meter total (1874) (e.g., $2590 \div 1874 = 1.38$). The ratios are recorded to the bottom of the page and used for next week's projected incomes.

The accuracy of this chart is amazing. Some weeks are a little high and some are a little low. Usually it is within \$100 of the actual income. Over the course of our nine months of operation (a large sample), we have a 1 percent margin of error in our predictions.

More information

Here are some facts derived from our charts:

1. From our attendance figures we have estimated that the average person started spending more than \$2.25 and is now down to \$1.75. This is determined by our attendance ratio. Early operations gave us attendance ratios of 2.25 to 2.35. Now with the increase of the recession, we have slowly dropped to 1.70. This is about 50 cents or two games per person, per visit.

2. Attendance and meter figures also tell us our peak hours, our low hours, traffic flow, etc.

3. By averaging many weeks, we have determined what percentage of the weekly take each day will produce. Our figures show that Sunday, Monday, Tuesday, Wednesday, and Thursday will each average about 12 percent of the weekly total. Friday brings in 17 percent, and Saturday brings in 24 percent.

Naturally variances do occur, but usually the percentages do hold up. These figures apply only during the school year as during the summer the percentages spread out a little more evenly from day to day. Often we take a quick weekly forecast by using our Saturday percentages. Roughly one-fourth of the take comes on Saturday.

4. By going over the records, we can see how special situations are influencing the take.

5. Weather records also show the influence of weather on the income. So far at Outer Limits, we have found the weather plays no consistent effect on play or attendance.

6. With these records, different

arcades can easily be compared.

Explaining this system has taken a little time; however, the actual implementation is extremely quick. Less than a few minutes a day is all that is required.

When crowded, the count may be a little off as people are in and out but it will average out so don't worry too much. If an hour is missed, simply carry on with the next hour, and just estimate the missed hour from memory.

Machine Repair

Chart II is self-explanatory. This

record gives us our consistent problems as well as the repair ability.

Message Chart

Chart III is self-explanatory. This is handy for a changing staff in passing information on to the next attendant(s).

Weekly Income Graph

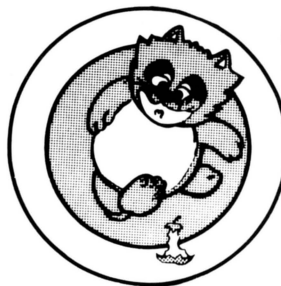
Chart IV is self-explanatory. This graph gives a quick picture of the weekly income and its fluctuations. •

Walford is manager of the Outer Limits Amusement Center in Temple Hills, Maryland.

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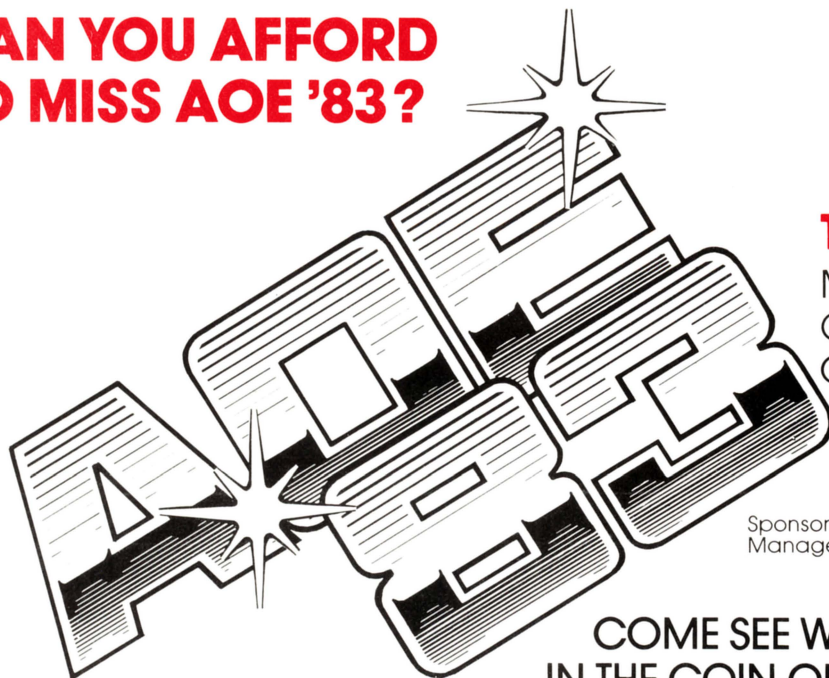
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AOE '83 will open the doors of its exhibit hall early for a distributors only preview on March 26 and 27, 9:00 — 10:30 a.m.

List of exhibitors as of January 1, 1983:

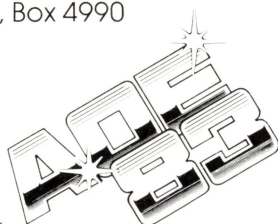
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TAX TIPS

By Irving L. Blackman

Taking money out of a closely-held corporation

It's amazing—business founders work and work to start and build their closely-held corporations. Survival, profits, and building corporate equity are usually the order of business goals. Finally, the welcome head of success appears. Now, the goals shift...getting money out of the corporation becomes top priority.

There is a problem, however: tax-wise, taking money out of a closely-held corporation can vary between being painless and a tax disaster. Clients and readers alike often ask for a checklist that rates the tax results in such cases. OK, here is a list of the main ways to take money out of a closely-held corporation, ranging from the most to the least desirable:

1. Payments deductible by the corporation that are tax-free to the shareholders and provide a current benefit. These include:

- Fringe benefits, such as medical and legal reimbursement plans, travel and entertainment expense reimbursements, and tuition assistance programs.
- Pension and profit-sharing plans to the extent the participant/owner/shareholder can borrow from the qualified plan.

In general, the law limits participant loans to the greater of \$10,000 or half of the participant's vested benefit (but not more than \$50,000).

2. Payments deductible by the corporation, and taxed to the shareholder, but which provide a current benefit. Examples include salaries and bonuses.

3. Payments deductible by the corporation but not taxable to the shareholder until received. The typical pension and profit-sharing plans fit in here (assuming no amounts are borrowed from the plans).

4. Non-deductible payments by the corporation which result in current benefits to the shareholders that do not have to be repaid and yield delightful tax-free money (return of capital) and capital gains (or losses). This is the world of stock redemptions: the corporation buys back some of its stock from the shareholders.

5. Payments which are non-deductible by the corporation and non-taxable to the shareholders but which must be repaid. This category includes loans (usually, interest-free) from the corporation to the shareholders.

6. Payments, which are non-deductible by the corporation and fully

taxable to the shareholder, that provide a current benefit. This is indeed a tax disaster...they are called "dividends." Caution: use only if all other methods fail.

Non-tax considerations should, of course, be considered as well. The ranking is suggestive only and must be adapted to your unique facts and circumstances. But remember this: No matter how you juggle the list, dividends always come up last!

Would you like to learn the tax secrets for taking tax money out of your business? Send for the *Special Report: How to Take Money Out of Your Closely-Held Corporation*. •

Irving L. Blackman is the senior tax partner at Blackman, Kallick & Company, Ltd., Certified Public Accountants, with offices in Chicago (180 North LaSalle St., Chicago, IL 60601), Miami, and Houston.

Blackman, also an attorney, is a nationally recognized author and seminar leader. Irv and James L. Harfield (Irv's CPA partner specializing in the coin-op business) have established a Hotline to answer the tax questions of Play Meter readers. Call Jim at 312/782-3424.

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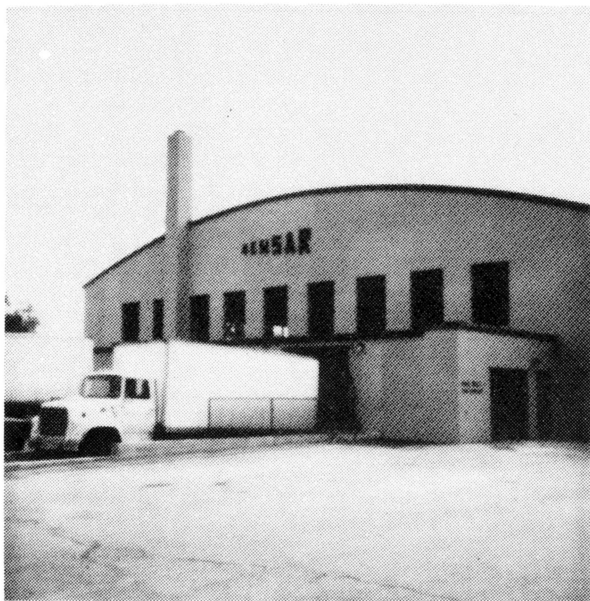
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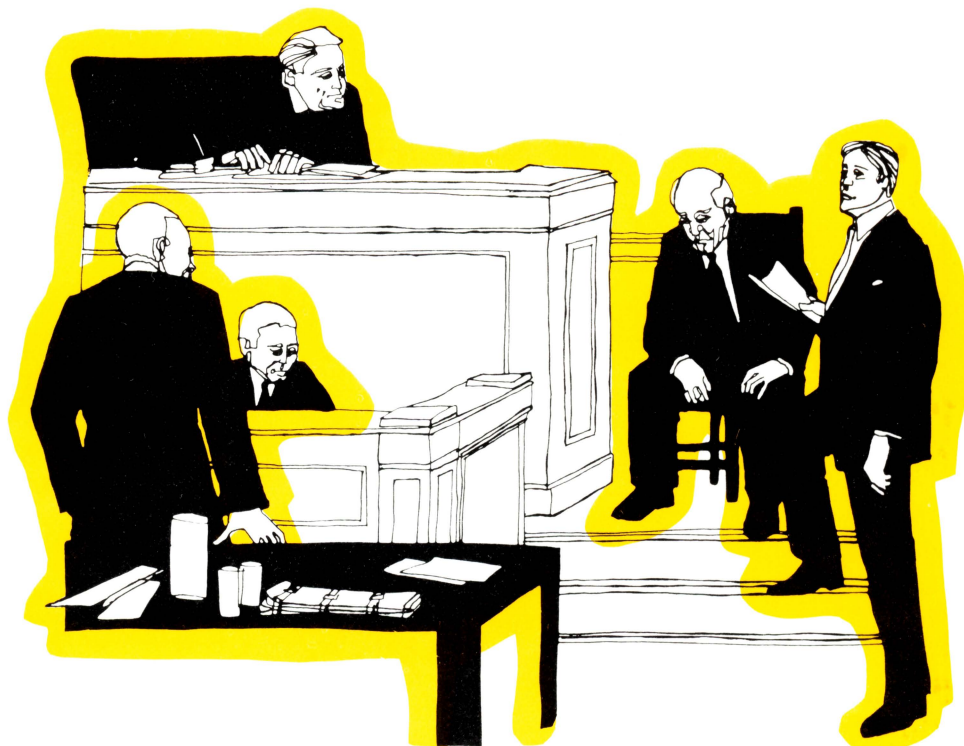
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Legal Hints:

The first order of business for every operator with every new location is a well-drawn, *strong*, written contract.

There is a lot that can be said about oral contracts. *Most* of it is negative.

If the contract does not clearly spell out how long it is to last, the general legal rule is that the location can cause the machines to be removed at any time.



Necessary elements of a good location contract

By Harold I. Gould and Laurence D. Merritt

Since our first article in the November 15, 1982 issue of *Play Meter*, we have received many calls and letters from operators as well as their attorneys from all across the nation. They all ask about the same thing: the enforceability of location contracts.

One letter from Mississippi states the following: "We have always secured signed location agreements from our location owners. Recently, one location owner has informed us that he wishes we pull all of our equipment out. We anticipate that this party will not live up to the agreement..."

Another operator called us from Indiana to complain that an arcade is no longer willing to live up to the terms of its oral contract. He wanted to know if an oral contract is enforceable.

The first order of business for every operator with every new location is a well-drawn, strong, written contract. If an operator has not properly secured his location with a good, written agreement, it is entirely possible that he may

lose not only expected profits but also his investment in the games there.

Because this topic is so important, we want to set out, item for item, what we believe to be the most important aspects of every location contract. They are:

1. It should be in writing. There is a lot that can be said about oral contracts. Most of it is negative.

2. The contract must be for a specific length of time. We recommend at least 60 months. We also recommend that the length of the contract be pre-printed in the form. The contract should also be automatically renewable for a like term. If the contract does not clearly spell out how long it is to last, the general legal rule is that the location can cause the machines to be removed at any time.

3. The consideration, or benefits the operator and the location are to receive, should be very clearly spelled out. If it is to be a 50/50 split for each piece, the contract should so state. If

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We are going to pass our savings along to you. Effective January 1, 1983, we are reducing the price of our regular video games to distributors by 15% to 20%. This includes the games we are currently making and games we will be shortly releasing.

We also are offering a game as a low priced conversion only. This conversion game, "LOST TOMB" can be used to convert any raster scan video game. However, our kit is specifically designed to convert in 30 minutes, old cabinet style Stern games, including Astro Invader, The End, Scramble, Super Cobra, Turtles, and Amidar.

The kit consists of printed circuit boards, cable, marquee glass, monitor glass, control panel and instruction manual. If United States buyers return to us a complete set of boards from the Stern game converted, including microprocessor and Eproms, we will send you a check for \$50.

"LOST TOMB" will be sold only thru Stern distributors. If your distributor does not have a "LOST TOMB" for you, call 1-800-621-6424 and we will arrange for him to get one for you.

In addition to manufacturing video games, we are continuing both our Seeburg Division and our printed circuit board manufacturing business. We currently insert components in boards for other companies and are doing several million dollars a year in sales of this service.

We recognize problems within our industry. With programs such as these outlined above, we see a bright 1983 for all of us.





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there is a minimum guarantee to be paid by the location, regardless of the gross revenues, that, too, should be clearly stated.

4. The damages in the event of a breach may be spelled out. Such a provision is especially useful where a location threatens to breach. The operator can point to this paragraph to demonstrate to the location how expensive it would be to breach the contract. Such a provision can be rather tricky for lawyers to write. Not all states will enforce a paragraph that specifies the type of damages that will be given. Operators should consult with their local attorney concerning whether such a paragraph can be included in the location contract.

5. The contract should state who is to pay for licenses, taxes, fees, and the like that may be imposed on the equipment. With more and more local governmental bodies attempting to tax and regulate games, this can prove to be crucial.

6. The contract must specify that it is an exclusive agreement; that the operator is the only person who has the right to place games in this business establishment. Without this type of provision, the contract is quite worthless. Any other operator, or the location itself, would have the right to install its own equipment. (You should place a sticker on your games stating that they are placed there pursuant to a written contract giving you exclusive rights. The sticker should serve to give unscrupulous competitors notice that they may face a lawsuit for interference with your contractual rights. In that type of lawsuit, you could seek not only loss of profits, but also substantial punitive damages.)

7. The contract should state who is responsible for any loss, vandalism, or other damage that may occur to the equipment while at the location. We recommend that the contract state that the location owner is responsible for any loss or damage regardless of why or how it occurs. In the absence of such a provision, the general rule is that neither the location nor its insurance is responsible. Rather, the operator would have to bear this loss entirely if he has no insurance coverage for it.

Thus, this recommended damage responsibility clause can be a very good form of protection for an operator. It should also serve to give the location some incentive to assume the

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duty to see to it that nothing happens to the operator's equipment there.

8. The contract must provide that in the event the location sells that the successor will be obligated to assume the agreement. Otherwise, when the business is sold, the location contract may become relatively worthless. This provision also gives you the first chance to do business with the new owner.

9. The contract may provide for resolution of disputes by arbitration. Today, especially in the larger metropolitan areas, the costs and delays involved in litigation can be very discouraging to an operator. In some areas it may take up to almost five years to get to trial! The amount of attorney's fees and costs that can accrue during that time could be staggering. However, a dispute submitted to arbitration can frequently be resolved within three or four months.

10. All written contracts should provide for attorney's fees and costs to the prevailing party in disputes. In

most states, the prevailing party is not to recover any attorney's fees unless the contract has this type of paragraph. It should be broad enough to provide for attorney's fees in the event of arbitration as well.

Some of our future articles will discuss the above concepts in greater detail. In the meantime, it should be remembered that the laws of the various states differ. Thus, an operator should have his location contract reviewed carefully by his own local attorney.

It should also be noted that the above terms are merely a skeletal outline of a location contract. All terms that should be included in an operator's location agreement are not necessarily stated above. Always consult with your local attorney. He may give you some very good suggestions that are relevant to your locale only.

When an operator comes to us as a new client, the first thing we do is review his location agreement. Frequently, that new operator has come

to us with a dispute concerning the agreement. Most often that dispute could have been avoided by a well-written location contract. We cannot stress too highly the importance of a well-written contract. It can improve an operator's profits tremendously and help him avoid problems he does not need. •

Gould & Merritt law firm is located at 1888 Century Park East, 6th Floor, Los Angeles, California 90067. Telephone: 213/552-9364. Harold Gould has served as Judge Pro Tem of both the Los Angeles Municipal Court and the Beverly Hills Municipal Court.

Laurence Merritt has been appointed as court mediator by the Los Angeles Superior Court and to the Panel of Arbitrators of the Los Angeles Superior Court.

If you have any legal problems or questions about your business, please contact Gould & Merritt.

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A merry-go-round:

Will 1983 pick up where 1982 left off?

By Roger C. Sharpe

It shouldn't come as any great surprise that the video game sweepstakes has taken its toll after a holiday season better served on Madison Avenue than Silicon Valley.

With advertising running almost everywhere and anywhere (Thank God, it's finally behind us.), offering rebates and other holiday specials that made home video almost too enticing to pass up, we can now return to reality where the news isn't any more sane.

I, for one, am still reeling from the prices and deals being thrown around for extra cartridges and discounts. I wonder how those folks felt who spent 'full price' for their systems. And throw into this mixture the advent of the *real* computer, with the likes of IBM offering special sales prices, and I have to stop and think whether we've just been game and computerized to death for the past four months.

Add to this the sluggish picture in the coin-op sector and the shake-out all have alluded to. After all, given the economy and all these other factors, the effect has to take its toll over the short run and conceivably over the long haul as well.

It's also become something of a game for Wall Street where stock prices rose incredibly over the fall months and then fell sharply as the Christmas season proved that the

market wasn't as full as many had forecasted. Atari suffered a 50 percent drop in its earnings, and the stock plunged 36 percent.

Mattel didn't do any better, falling 37 percent as these and other issues went through a seige that found massive numbers of points being shed every day in the closing market prices on the big board.

Game glut

The reason could well be the fact that there was a glut of games, systems, and all the rest that the public just couldn't, or wouldn't absorb. And, in all the frenzy, just what the ramifications might be for coin-op can only be guessed at in terms of future licensing deals and the options available given the number of contenders still involved in the hunt. The prospects don't look good to say the least.

But, before I go any further, don't think that I am one of those who has lost faith in the longevity and ultimate profitability of the industry or video games. I marvel at the fact that so many on the outside of this business don't understand it, nor realize that the continuing growth couldn't be sustained at its formidable rate. There had to be some incremental falling off and, in fact, by year's end many of the stocks had once again begun to firm up

and even rise.

Where my amazement enters is at the media over-kill of the games and the technology in general. There was, as an example, a bank advertisement in New York City where potential depositors could get an Atari home computer system just by opening the appropriate type of account. Some inducement. IBM even began offering specials when customers purchased its models, and the list goes on and on.

Tournaments and contests of all types were in full swing for coin-ops as well as home video cartridges, with certain companies looking for some additional push to get games into the spotlight that was always crowded with contenders and pretenders to the throne. From Bally's *Tron* extravaganza to a cross-country Mattel blitz to efforts by Activision along with many others, there seemed to be a ready supply of challenges for would-be aces to prove their worth.

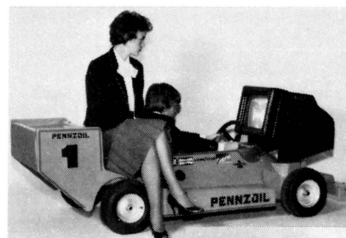
Still and all, the biggest explosion was in the home as video game systems became almost as important as a television (color, of course) in every living room or den. As such, when historians look back to the noteworthy events of the beginning of this decade, there's no doubt the sociological studies will focus in on leisure time entertainment

I am still reeling from the prices and deals being thrown around for extra cartridges and discounts.

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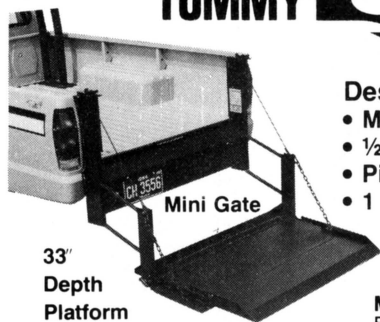
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and, specifically, the emergence of video games as a universal staple.

Who could have imagined just five years ago how dramatically lives would change due to arcade games and the tapping of a then still infant technology? At the time it was seen as a necessary evil in order to alter the increasing production costs associated with electromechanical machine tooling, as well as an opportunity to take the next inevitable evolutionary step in equipment design and development.

Fast change

But to have it all take shape so rapidly and completely where other industries have also been effected, is something I don't think anyone bargained for—especially those in the toy business or the consumer electronics field.

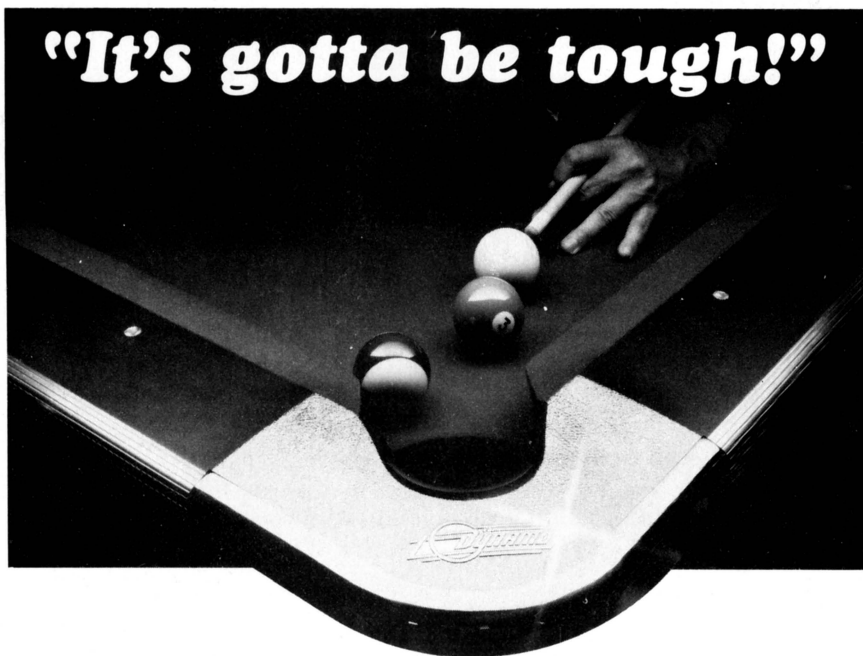
The impact of coin-op has been vital and considerable in setting the stage for enormous change in all facets of daily life and the molding of the next generation. That's a pretty big responsibility when you come to think about it, which is why I was somewhat dismayed, but not surprised, by the holiday season onslaught of news and advertising messages heralding video in all shapes, sizes, and forms.

With 1982 over, I am left wondering just what monster has been created and whether there is any way we can ever control it. Have we unleashed a Pandora's box upon the world that might have been better left to a more gradual growth?

It's too late now to change the course of events. But there's a part of me that tends to believe that somewhere down the road there will be a real need for the taking of responsibility and some role regarding the ultimate place of games in society and the nature of those games.

There will, of course, be time for these grander decisions and confrontations, but as we slowly move through yet another year, it will be interesting to see what this industry's success will bring. For every action, there's a reaction and most assuredly coin-op will prove no exception to this rule. I for one remain unwaveringly optimistic for the future of the business and its adaptability as well as instinct to survive. •

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GAME PLAY: The object of the game is to avoid and eliminate Cats and Snakes, while capturing territory.

The movement of *Macho Mouse* is controlled by Player's control level.

With Player's push-button control, *Macho Mouse* can set up to 5 explosive balloons, one at a time, in each maze pattern.

Player's push-button controls explosions to eliminate Cats and Snakes.

Macho Mouse can pause at flags, or in the midpoint of a longer block (path).

Macho Mouse and Snakes can go down the steps, but the moving speed becomes slower at the steps.

SCORING:

- (1) 50 points for each block claimed by Mouse.
- (2) 100 points for each Cat killed.
- (3) 200 points for each Snake killed.

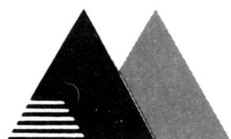
BONUS GAME: A simulated slot machine displays Cat, Snake, Mouse and Flag in 3 windows of a house. To stop the reel, Player pushes balloon control button. Player has 3 chances to get characters lined up in one of the combinations listed as bonus points under the house on the screen. Three mice awards free game. With or without bonus points, level-2 of the maze game appears.



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FOR PROMOTION

By
Carol
Kantor

What is the best promotion?

Operators often ask, "What is the best promotion for my game center?" The answer is: *More* promotion is best.

There is no one promotion that will solve all the traffic building, collection boosting, and awareness generating needs. There are some that are better than others to get the desired results. However, the only real answer is to keep on doing more promotions specifically targeted to fulfill set objectives.

In the case of promotion, *more is better*. A single well-planned and executed promotion can be very successful to build business. However these positive results only continue to work for a relatively short time. If pro-

motions are used often, the positive results will last. Start today to plan promotions for the entire year.

A good promotion plan will include at least six to eight different special one to three-week promotions over a year. In addition to these, several long-term programs should also be used such as a players' club or weekly "feature game" score contest.

Each promotion should be evaluated as soon as it is tried to determine if it should be done again, how often, and if any revisions would make it better. Your promotion calendar should be planned for a year in advance and continuously revised based on evaluations of programs used and changes in the market.

Work a plan

Planning a year of promotions is developing a set of objectives, a list of ideas, and a budget. Organize these elements into a calendar, and then set the schedule for finishing the details for each promotion. This will result in a program that works.

Objectives for your promotion program will vary, but the overall results will be higher profits and making your location a better place for players to have more fun. The ways to accomplish this goal are to bring in more new customers, to generate more coins going into more games, to build a good reputation as a fun place and a contributor to the community, and to maintain the positive enthusiasm of your

Organize a list of promotion ideas: Objectives/Results—Duration—Budget

(Leave room for evaluation notes to be added.)

IDEA	OBJECTIVES/RESULTS	DURATION	BUDGET	EVALUATION
Player Club four plays/week & other privileges	gain customer loyalty—repeat business	all year	\$1,500 will get revenue from card sale to offset this cost	Sold 100 cards in first four weeks...
Ladies' Nights hand out cards good for 10 free plays on Wednesdays	increase female traffic	summer three months	\$200 coupons, signs, ads	
Treasure Hunt mail and hand out keys in mall to open treasure chest in location	build new traffic	fall one month	\$650 treasure chest, keys, and tags, mailing, prizes	
New Game Tournament mystery tournament for members	build collections and interest in a new game	five days	\$300 posters, ads, prizes	
Games & Balloons for School Dance bring balloon to location for prize	public relations & build awareness	one night	\$150 balloons & posters	
Buy a Bag of Tokens bag of 50 tokens, special price	build revenue & offer Christmas gift idea for customers	Christmas two months	\$500 cost offset by sales	

customers and employees.

There are thousands of different promotion ideas. The best promotion plans include a variety of events, contests, and programs spread out over the year. Some "in-store" type promotions are: tournaments on specific games, contests that don't require playing any games, celebrity challenges, feature players, or club cards.

"Out-of-store" promotions are also important to build awareness and draw new customers. Direct mail, coupon advertising in local media, sponsoring a school sport team, or donating game proceeds at a charity event are a few ideas in this category. Be sure your plan includes several public relations type promotions to keep building a positive image.

The length of time for any one promotion should also vary. There should be a few long-term promotions like a player club or a Free Play for Good Grades program. Other events may only be one or two days like a tournament or celebrity show. It is good to include some quick events as well as the ongoing ones.

Once your list of promotions is com-

plete, it should be reviewed and put onto a detailed calendar. At the same time, the planning dates should be marked on the calendar. For example, about 10 to 12 weeks prior to a big event, plans for ordering advertising and promotion materials should be set. Check lead times for getting supplies, placing ads, and other details

*The best promotion
is a complete
well-planned program
for more promotions
throughout the year.*

for each promotion. Mark the calendar as a reminder to start well ahead of time to make each promotion the best one.

Calendar builds enthusiasm

A complete promotion calendar for the year will give even better opportunities to build enthusiasm in advance for an event. "Hey, we will be having

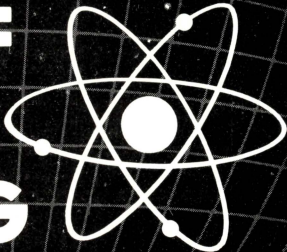
an accumulated score contest in a few months, and I'm sure that game will be included!" might be a comment from a well-informed employee. This will help make the good results start even sooner.

A complete promotion calendar can be used as a working plan. It should be in pencil and modified throughout the year to reflect those events and opportunities that make good spontaneous promotions. Remember, more promotion is better. Keep the calendar up-to-date and flexible to accommodate new additions and changes.

The format for your promotion calendar can vary. One suggestion is to illustrate it. The calendar should be posted in an obvious and easily accessible area of the office so it can be referred to daily. The calendar is a key to the promotions' success. If all the details are handled in a timely way, the actual event will most likely run smoothly.

The best promotion is a complete well-planned program for more promotions throughout the year. More promotions make a location more fun and therefore more successful. •

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Sample Promotion Planning Calendar

	18	19	20				
Order Halloween bags							
	25	26	27	28	29	30	10-1
			Work on last details for Score Contest flyers, ads...				Celebrity Challenge DJ at location
	2	3	4	5	6	7	8
Sponsor school sport event			Send mailing to youth clubs on parties at location			Order Christmas token bags	Put up signs for Score Contest
OCTOBER	9	10	11	12	13	14	15
				Party for charity fund raising	Check radio ads for Score Contest		Start Score Contest
	16	17	18	19	20	21	22
Score Contest							
	23	24	25	26	27	28	29
Score Contest			Order membership cards for Feb. Gold Card special				Halloween party
	30	31	11-1	2	3	4	5
			Plan raffle drawing for December		Feature Game High Score Contest		
	6	7	8	9	10	11	12
Feature Game High Score				Order art for New Year mailing			
NOVEMBER	13	14	15	16	17	18	19
			Start Christmas Bag of Token Campaign	Get Christmas decorations for location			
	20	21	22	23			
		Order supplies for Jan. 14 tournament			etc.		

Ongoing events:

Players' Club
 —special signs
 —member features
 —new privileges

Free Play Good Grades
 —post list of players with "A's"

Player Hall of Fame
 —"Photo Window"
 —Take three new photos per week—post in window.

FRANK'S CRANKS

By
Frank
Seninsky

'Super Zaxxon' charts a new course

One of Sega's latest games is *Super Zaxxon*. This game is actually an updated version of *Zaxxon* with some important cabinet, sound, and control changes.

The *Super Zaxxon* cabinet utilizes the new Model 101 style. Instead of the two fold-down wooden doors that players enjoyed kicking in, Model 101 comes with the Coin Control Inc. over/under coin and cashbox doors. These are the same doors used on Atari games, and now with Sega using them, perhaps they will become the industry standard.

I've gone on record as stating that these are the best doors I've seen to date. If a game is broken into, in most cases, it is a simple matter to just bend the door back into position, apply black spray paint, and you're back in operation. If the small cashbox door is unrepairable, a new one is really inexpensive.

A dark chocolate brown color was chosen for the cabinet that will not scrape off easily. However, stick-on side graphics have been applied that will surely be peeled off. The stick-on type graphics are a waste of time and money if you want the game to look attractive after a week in the field.

The control panel swings down from the top when the two side latches are released. Two spring-loaded rods, one on each side, secure the bottom of the control panel to the game cabinet. By releasing the rods, the entire control panel is easily removed from the cabinet. Sega has used this design before on its convert-a-game cabinets. The latches and rods keep the panel securely attached to the cabinet. The large joystick controls on *Zaxxon* and *Super Zaxxon* produce a large

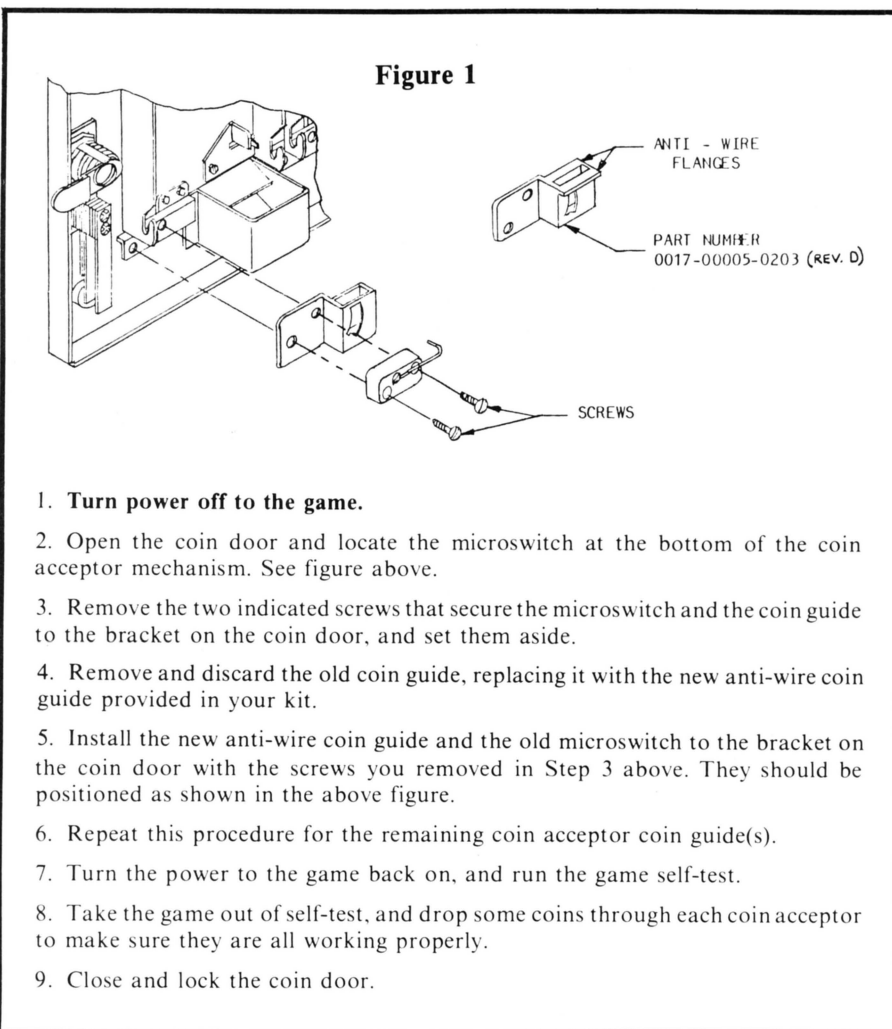
force that is exerted on these latches and rods. They have to be durable. And they are!

The joystick "redesign" has been further redesigned. Sega is now using hardened American steel for the control shaft and brackets instead of the soft, Japanese-made steel that was used on the original *Zaxxon* handles. Sega claims that there were no pro-

blems with the soft steel shafts on the games that were used in Japan and Europe where the players don't abuse the games like their American counterparts obviously do.

Joystick solution

To solve this joystick problem and to insure that it never occurs again on Sega products, the company has pur-



chased a robot actuator driven tester that randomly moves the joystick in eight directions, 360 times per minute. When it put the original handles on this machine, they broke after a few minutes. The new handles haven't broken after many hours on the tester so Sega feels sure it has solved the problem.

An improvement was made to the bottom section of the joystick where the trigger wires pass through. Plastic tubing now protects the wires from the end of the metal shaft where heavy rubbing occurs from the shaft movement against the wire insulation. The tubing should eliminate service calls in this area.

The control panel overlay is durable and is put on well. The games I've seen showed no bubbles under the material. The material is wrapped around both the top and the bottom of the panel so it can't easily be peeled off. Its black color will hide some of the scratches and cigarette burns that it will surely receive.

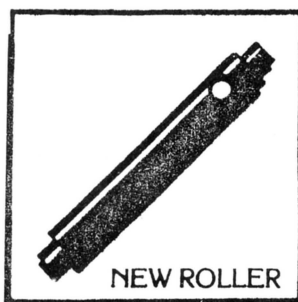
A cashbox lock tab is secured to the top frame of the cashbox compartment. The cashbox can be locked adding more security. It's also important because there are locations where it is procedure to use cashbox locks. A coin meter is located right under the tab and can only be seen by the collector. The addition of the cashbox lock tab was made by Coin Controls, and I'm glad to see it.

The volume control is located on the outer of the two logic boards, but it

PROBLEM: CENTIPEDE TRACK BALL ASSEMBLY



WORN ROLLER



NEW ROLLER

Figure 2

can be reached from the coin door if you know exactly where it is. Switch 3, the self-test switch, is also located on the outer logic board at the upper right corner of the board assembly. It, too, can be reached from the coin door.

The power supply is a modified Model G80 that has proven to be very reliable. The entire supply is mounted to a platform raised 3 inches above the cabinet floor.

Vent holes have been made in the cabinet below the supply and under the platform. The platform and vents were required because, as I understand, a fan will not be incorporated in the game as it was in *Zaxxon*. Most of the heat build up came from the sound components of the old-style amplifier circuits. Sega's new universal sound board has been added to the two-board system in *Super Zaxxon*. The heat generated from the new board is minimal. This separate sound board was first used on *Tac-Scan* and was designed for convert-a-pack.

Saves money

All the G80 games will use the same sound board. This also simplifies troubleshooting because the boards can be isolated. It also saves the buyer of a convert-a-pack the price of the sound board.

To change *Zaxxon* to *Super Zaxxon*, all that need be done is add this sound board and change the old type E-Proms to the new style E-Proms on the PC Board. The new E-Proms have also been used in *Buck Rogers* and are called 27-128's (8 x 128K storage). The old type of E-Proms has only 8 x 64K storage or one half the storage capability.

Since *Super Zaxxon* is so similar to *Zaxxon*, there isn't too much left to

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write that hasn't already been covered. The game is well made and has a very durable power supply. The joystick assembly has been improved substantially. The new over/under coin doors are much better than the wooden doors. I haven't heard about any repeating or intermittent service problems. The graphics could be applied with a better method than stick-ons, and the marquee or attraction panel can easily be stolen and/or punched in. The sound is even more detailed than that of *Zaxxon*. Overall I'll give *Super Zaxxon* an 8.0 out of 10.

A Sega tip...

Tac-Scan 02 Convert-a-pack—If you've recently received a *Tac-Scan 02*, there are two problems that you may come across:

1. The harness leading to and from the control panel on the right side has a molex plug connector. The pin cramps on the female connector (part #2110042) may be loose. Check each one before panicking.

2. On some of the G80 card cages, the red connectors, which are called insulation displacement connectors, have wires that are not connected properly. All that need be done to correct the problem is to take a small screwdriver and push the wires in far enough that the metal blades on the connectors cut through the wire insulation and make a good electrical connection.

An improvement by Midway

Some months ago Midway redesigned its coin switch guides by adding molded in flanges on the top section to prevent wire cheating. The anti-wire coin switch guide (part #0017-00005-0203) is shown in Figure I. This new guide was installed on *Ms. Pac-Man*, but there are *Pac-Mans* out in the field that have the old guides.

If you are having problems with earlier Midway games due to wires being forced through the coin guide and onto the coin microswitch, it will definitely help to install the new guides. It takes about two minutes of your time, and the cost is minimal. And it works!! Thank you, Midway.

Atari/Centipede

If a *Centipede* track ball is not working properly, revenues will surely decrease. *Centipede* has been out in the field for some time now, and there is a good chance that the rollers are worn on the track ball assembly.

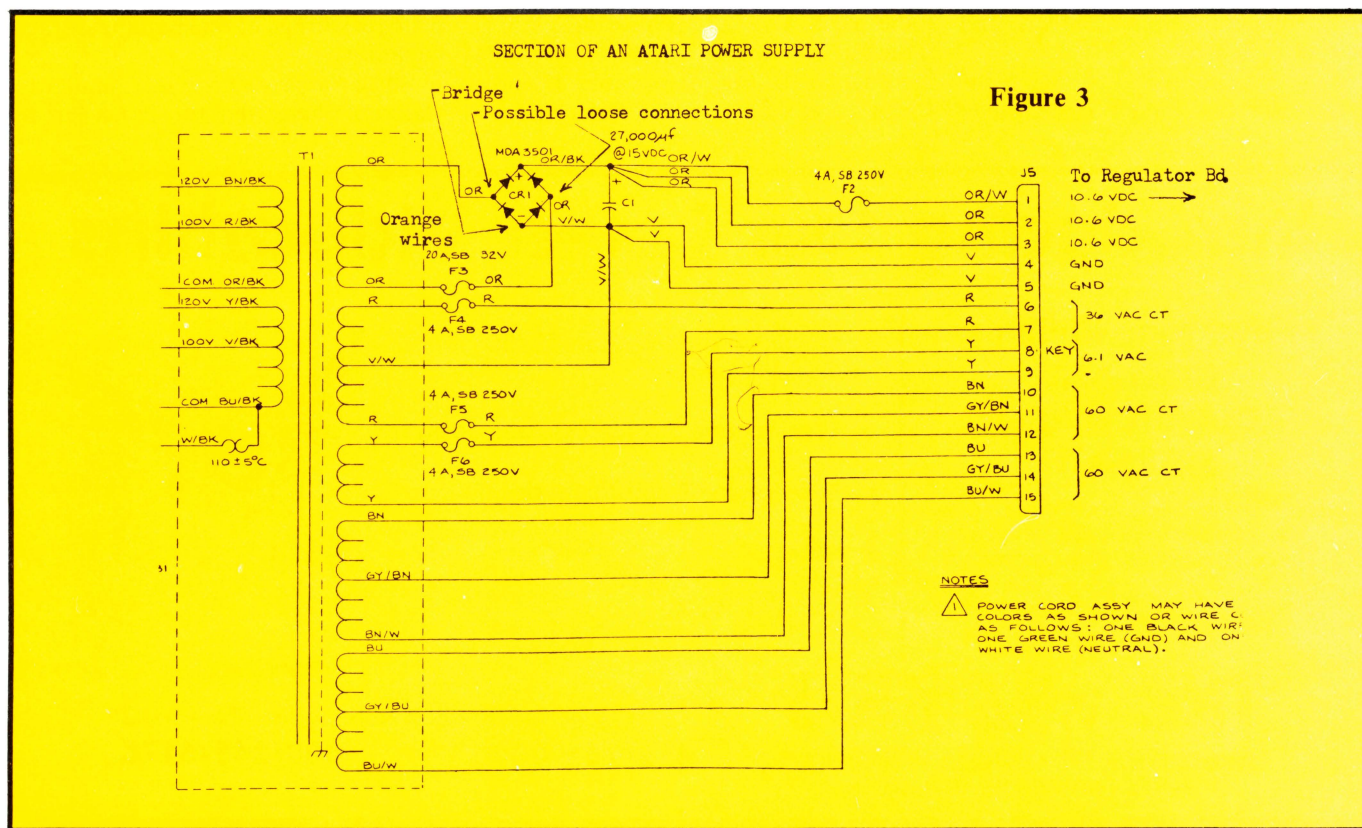
Symptoms of bad rollers are inaccurate tracking, no movement of shooter in one or more directions, and/or loose or rough track ball movement. Figure II shows what a worn roller looks like. Each track ball has three of these rollers. A good roller is shown in the next picture. It will cost about \$20-\$25 to replace three rollers. I think it is definitely a worthwhile investment if you want your *Centipede* to earn.

Atari games/*Centipede*, *Dig Dug*, etc.

Symptom: The monitor screen is black, and the +5 volt LED on the logic board is not lit (if no LED than there is no +5 volts). What has most likely happened is the voltage regulator board is not receiving 10.6 volts DC (11 volts) unregulated from the power supply bridge (MDA 3501 in Figure 3). The regulator board output is the +5 volts that is not present.

Unscrew the power supply chasis, and look at the four wires connected to the bridge terminals. There is a good possibility that one of the orange wires has burned or melted and the connector is also burned. This is the result of a loose connection and/or an under-rated bridge. The four wires are pushed on to the bridge terminals using "quick disconnect" fittings. The orange wire from the 20 amp slo-blo fuse to the bridge is the wire that melts.

Solution: The best solution is to run a thicker gauge wire from the transformer terminal to the bridge, and solder the wire directly to the bridge terminal. This is an easy on location fix but only if you now where to look. In this case, the bridge is still good and no fuses were blown. It's a good idea to replace the bridge with a higher rated bridge. MDA 3501 is rated at 35 amps/100 PIV. A 35 amp/400 PIV bridge will correct this problem.



POWER SUPPLY DESIGN COURSE PSD-1

Lesson Six: Filters

Editor's Note: The material below is a serialization of the Kurz Kasch correspondence course for electronics, designed specifically for the coin-operated amusement industry. This course is copyrighted and owned by Kurz Kasch of Dayton, Ohio, and its reprinting is being sponsored jointly by Kurz Kasch and Play Meter magazine. This material is authorized for publication exclusively in Play Meter magazine.

Lesson Six – Filters: This sixth lesson teaches the student how to calculate the value of capacity for a capacitor input filter. The presentation is extremely useful since it is based on two known factors, the load impedance and the value of ripple voltage desired. Included are calculations for both a half-wave and full-wave rectifier.

FILTERS:

In the previous discussion regarding AC to DC conversion, it was established that the output voltage from the rectifier is a PDC. Many times, however, the effects of a PDC upon the load will be detrimental. Therefore, steps must be taken to convert the PDC to as pure a DC as possible. This conversion is termed **filtering**. The waveforms shown in fig. 6-1 illustrate a filtered PDC. Notice that $V_{O(av)}$ equals $V_{O(pk)}$. This

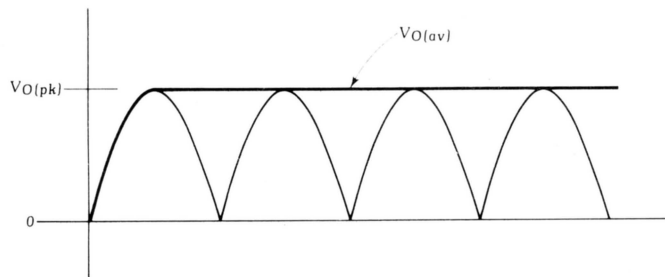


Fig. 6-1: The waveform associated with an ideal filter. The output voltage will be equal to the peak voltage and a pure DC.

condition represents the ideal. The purpose of this lesson is to analyze and then develop a convenient method to design a filter.

In today's electronics when semiconductor devices are used as the rule, the trend is toward low voltage/high current power supplies. Although there are other devices which are useful in filter circuits, the capacitor is by far the most popular. Therefore, the discussion of filters in the program will include only **capacitor** filtering.

CAPACITORS:

Before beginning the discussion on capacitor filtering, it would be best to first review some general concepts re-

garding capacitors in DC circuits.

The circuit shown in fig. 6-2 is that of a capacitor connected across a DC voltage source and in series with a switch (S). Also shown are the associated current and voltage wave-

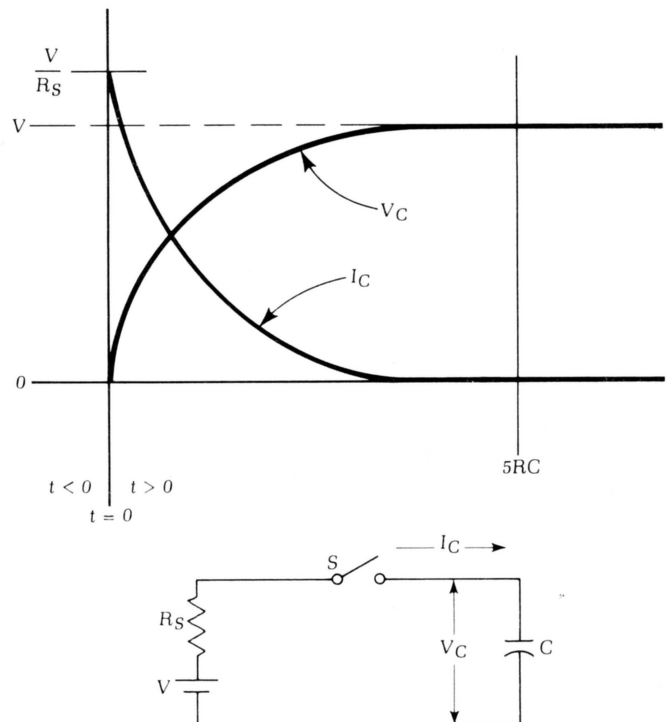


Fig. 6-2: The current and voltage relationships of a charging capacitor. The current rises instantaneously to a maximum value then decreases exponentially to zero. At the same time, the voltage rises exponentially to the battery voltage.

forms. At times $t < 0$ the switch is open and the voltage and current waveforms are zero. At time $t = 0$, S is closed. The current drawn by the capacitor, I_C , rises in value to an amount limited by R and V and then decreases exponentially towards zero. Also, at $t = 0$ the voltage across the capacitor, V_C , begins to rise towards the battery voltage, V . At time $5(R \times C)$, V_C is approximately V and I_C is approximately zero. At this time the capacitor is said to be **charged**. To consider the waveforms associated with a discharging capacitor, refer to fig. 6-3. The circuit shown in the diagram is a capacitor with a

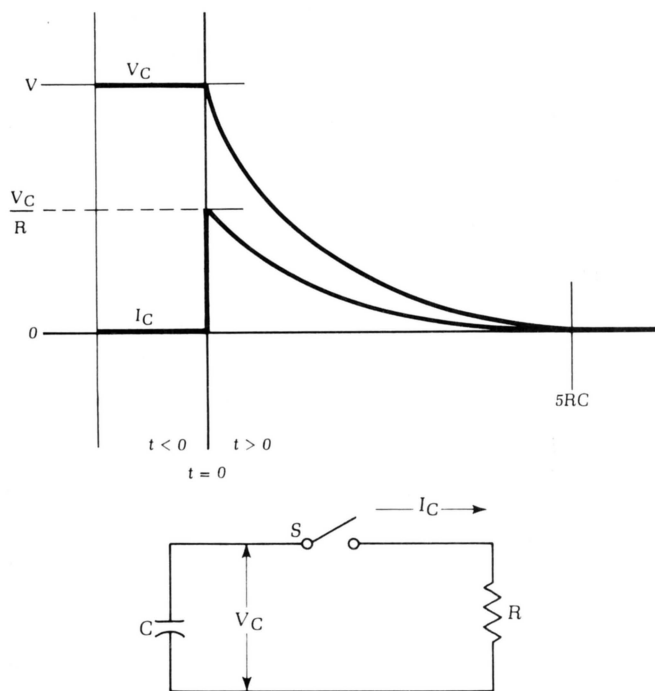


Fig. 6-3: The voltage and current relationships associated with a discharging capacity. The voltage exponentially decreases to zero. The current instantaneously increases from zero to a maximum value then decreases proportionately with the voltage.

resistor R connected across it through a switch. For times $t < 0$ the capacitor is charged; therefore, V_C equals V and S is open. The current I_C is zero for $t < 0$. At $t = 0$, S is closed. I_C raises in value to the amount V_C over R and then falls exponentially towards zero. Also, at $t = 0$, V_C begins to fall towards zero exponentially. At time $t = 5 (R \times C)$ both the current and voltage waveforms are approximately zero, and the capacitor is said to be **discharged**.

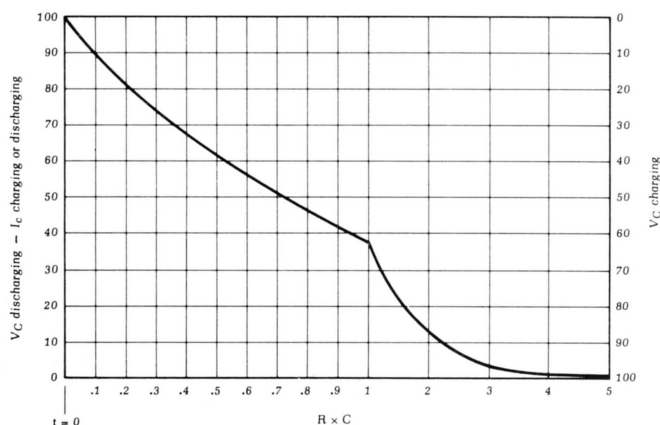


Fig. 6-4: A graph of the voltage and current waveform associated with charging and discharging capacitors. The first time constant has been expanded five times for more detail.

The unit $R \times C$ is termed a **time constant** and is represented by the Greek letter tau (τ). Fig. 6-4 is a detailed diagram of the waveforms associated with charging and discharging capacitors. The diagram is universal and can be used to find a worthy approximation of V_C or I_C for a charging or discharging capacitor.

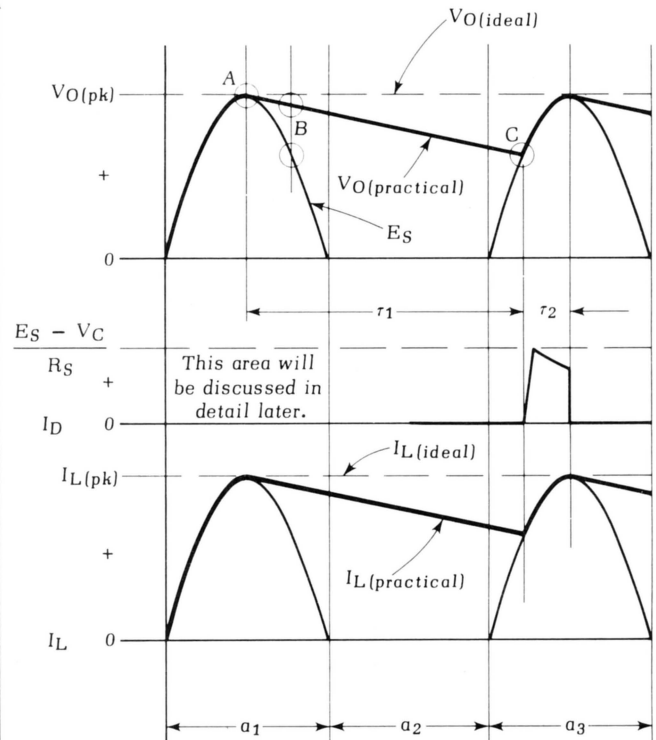
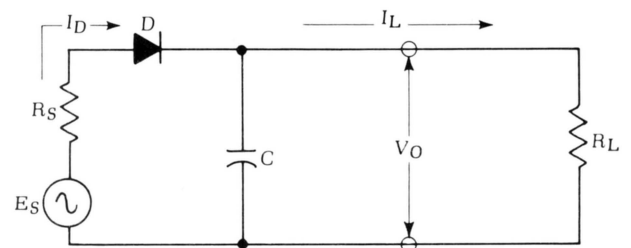


Fig. 6-5: The detailed presentation of the relationships between the current and voltage waveforms of a filtered HW rectifier. Also shown, are the relationships between an ideal and a practical filter. Also, of importance to the student, is the relationship between τ_1 and τ_2 .

HALF-WAVE FILTERS:

The circuit shown in fig. 6-5 is a model of an HW rectifier with a filter capacitor C . The voltage source, E_S , is an AC source and represents the transformer secondary winding. R_S represents the sum of the resistances as viewed from the capacitor; that is, the forward biased resistance of the diode and the resistance of the transformer winding. R_L is the total effective resistance of the load.

The waveforms shown illustrate the action within the circuit as the generator voltage, E_S , is cycled. Notice that the locus, V_O , will follow E_S to the peak value point A. At this point, E_S begins falling towards zero. V_O , however, will, in the ideal case, remain at the peak value. In practical circuits, where R_L is less than infinity, V_O will also fall towards zero. Notice, however, at point B that V_O is greater than E_S . The diode is then reverse biased, and the capacitor is discharging through R_L . The portion of the waveform from A to C is then the time constant τ_1 . Where τ_1 is:

$$\tau_1 = R_L \times C$$

On the next generator cycle, E_S begins to increase in value towards the peak. At point C, E_S becomes greater than V_O and the diode forward biases. The capacitor C is then charging through R_S . This second time constant, τ_2 , is:

$$\tau_2 = R_S \times C$$

From the waveform one can easily see that the greater τ_2 is the closer V_O will approach the ideal. The variation in amplitude, ΔV_O , is termed **ripple voltage**. A performance value can be established based on the two time constants. It is:

$$\frac{\tau_1}{\tau_2} = \frac{R_L \times C}{R_S \times C} = \frac{R_L}{R_S} = \sigma$$

Also shown in the diagram are the current waveforms associated with the circuit. The current through the diode, I_D , is, of course, zero for all periods when the diode is reverse biased. When the diode is forward biased, I_D will then be I_C , the charging current of the capacitor, and I_L , the load current.

$$I_{D(pk)} = \left(\frac{E_{S(pk)} - V_C}{R_S} \right) + \left(\frac{V_{O(pk)}}{R_L} \right)$$

Power supply design specifications, however, are generally not given in a sigma value. The more practical specification is V_O , R_L and the desired percent of ripple voltage. For these requirements a value of C can be determined.

In order to express C as a function of the desired percent of ripple voltage (%r), first refer to fig. 6-6. Notice that the ripple voltage, ΔV_O , is the difference between $V_{O(pk)}$ and that value instantaneous voltage, e , of E_S which forward biased the diode.

$$\text{ripple voltage} = \Delta V_O = V_{O(pk)} - e \quad (9)$$

To express the ripple voltage as a percent of the peak value:

$$\%r = \frac{\Delta V_O}{V_{O(pk)}} \times 100 \quad (10)$$

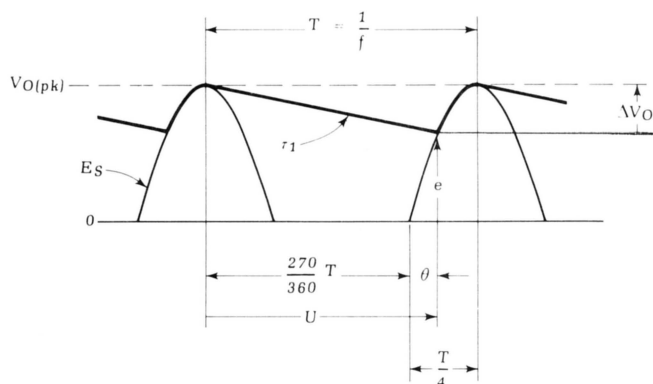


Fig. 6-6: The ripple voltage, ΔV_O , is the difference between the peak voltage and the instantaneous value, e , at which the diode begins to forward-biased. This relationship can be expressed as a function of time. The time relationships being T , U and θ .

Referring back to the diagram, notice that the time periods are well defined. The time between the peak values, T , is the reciprocal of the frequency or $1/f$. Also, T is 360° on the sine

wave. Therefore, the period when E_S goes from zero to the peak value is 90° on the sine wave or one-fourth T . In the ideal case the voltage across the capacitor will discharge 0% in the period $1/f$. However, in practice the voltage across the capacitor will discharge. Since the discharge voltage waveform is linear down to 20% (within 2%, worst case), the relationship between % ripple and % discharge voltage can be considered equal. Therefore, the value of C must be such that the voltage across it will discharge the desired percent in the time period U . The period U being three-fourths T plus the amount of time required for E_S to increase to the value necessary to forward bias the diode.

To find U substitute formula 9 into 10 for e , and solve for e .

$$e = V_{O(pk)} \left[1 - \frac{\%r}{100} \right] \quad (11)$$

After substituting formula 3 for e and simplifying, 11 becomes:

$$\sin \theta = 1 - \frac{\%r}{100}$$

then

$$\theta = \sin^{-1} \left[1 - \frac{\%r}{100} \right] \quad (12)$$

and

$$U = \frac{3}{4}T + \left(\frac{\sin^{-1} \left[1 - \frac{\%r}{100} \right]}{90^\circ} \right) \cdot \frac{T}{4} \quad (13)$$

Since U is known and the percent of voltage discharge is considered equal to the percent of ripple, then:

$$U = \left[\frac{\%r}{100} \right] \cdot R_L C$$

then the value of C is:

$$C = \frac{U}{\left[\frac{\%r}{100} \right] R_L} \quad (14)$$

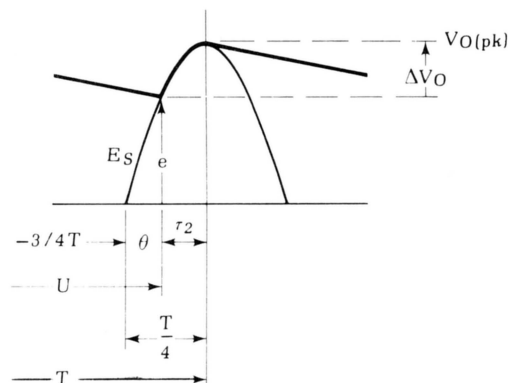


Fig. 6-7: The filter capacitor must fully charge in the time period $T/4 - \theta$. This time period termed τ_2 is the period which the diode is forward-biased.

$$= 12.495\text{ms} + \left(\frac{\sin^{-1} 0.9000}{90^\circ} \right) \cdot \frac{T}{4}$$

$$= 12.495\text{ms} + \left(\frac{64.2^\circ}{90^\circ} \right) \times 4.165\text{ms}$$

$$= 15.465\text{ms}$$

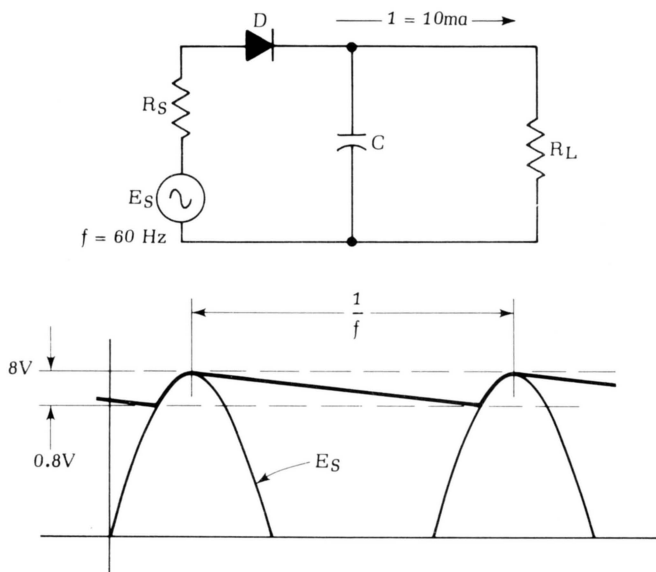


Fig. 6-9: Sample problem.

STEP 3: Find R_L .

$$R_L = \frac{V_O(\text{pk})}{I}$$

$$= \frac{8.0\text{V}}{10\text{ma}}$$

$$= 800 \Omega$$

STEP 4: Find C.

$$C = \frac{U}{\left[\frac{\%r}{100} \right] \cdot R_L}$$

$$= \frac{15.465\text{ms}}{0.1 \times 800 \Omega}$$

$$= 1931 \text{ mfd}$$

We will use 2000 mfd.

Considering the same specifications for a full-wave rectifier, the period between peaks is then one-half of $1/f$.

STEP 1: Find the %r.

$$\%r = \frac{\Delta V_O}{V_O(\text{pk})} \times 100$$

$$= 10\%$$

STEP 2: Find U.

$$U = \frac{T}{4} \times \left(\frac{\sin^{-1} \left[1 - \frac{\%r}{100} \right]}{90^\circ} \right) \cdot \frac{T}{4}$$

$$= 4.165\text{ms} + \left(\frac{64.2^\circ}{90^\circ} \right) \cdot 4.165\text{ms}$$

$$= 7.136\text{ms}$$

STEP 3: Find R_L .

$$R_L = \frac{V_O(\text{pk})}{I}$$

$$= 800 \Omega$$

STEP 4: Find C.

$$C = \frac{U}{\left[\frac{\%r}{100} \right] \cdot R_L}$$

$$= 0.1 \times 800 \Omega$$

$$= 891.8 \text{ mfd}$$

We will use 1000mfd. The above examples illustrate the fact that the full-wave rectifier configuration is considerably more efficient when the rectifier output is to be filtered.

U.S. Surgeon General C. Everett Koop announced to the world at large that video games are a scourge upon the minds, hearts and souls of the nation's children...

Well, pass the smelling salts and unplug that little bleeper. Let's get back to the gentler, healthier pursuits of earlier generations. What our young people need are games which build

respect for life and limb. What our young people need are old-fashioned, wholesome games. How about football, for example?

In the character-building game of football, as I understand it, the idea is to crush the opposition, man to man and all together as a team. Squash 'em like bugs. Get 'em before they get you. That's the idea...

The surgeon general may be right. The gentle game of football, on the field and off, is much better than those pesky video games. There is little violence in football. Everybody plays fair. Nobody ever gets hurt, physically or emotionally. And I'm the Queen of Siam.

—Nickie McWhirter
Detroit Free Press

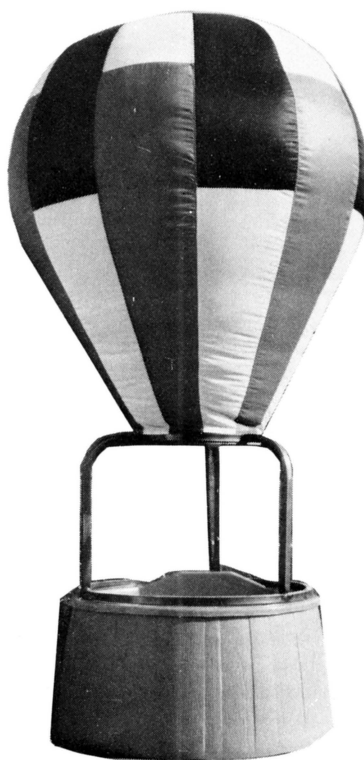
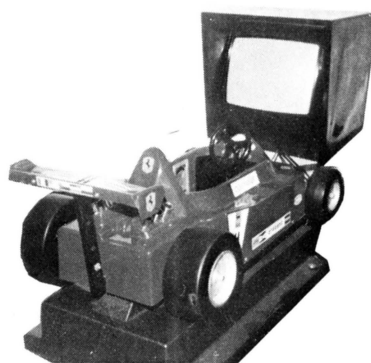


Sega unveils table version

Sega Electronics Inc. introduces a new type of table model for its cartoon video game, *Pengo*.

The first of its kind on the market, this table model can be adjusted from a 20 inch high standard sit-down table to a 40 inch high stand-up counter level game. This feature offers maximum flexibility to operators whose locations may prefer that players stand, yet the game can be lowered to a sit-down table should the location change.

Pengo is the light-hearted cartoon pursuit adventure game that features the lovable penguin hero who is chased by pesky Sno-bees on an antarctic ice field.



The race is off!

"We're very pleased with the reaction of two of our newest coin-op kiddie rides," explains Marketing Director Melvin W. LaForce of Kiddie Rides USA in Davenport, Iowa. "We think they're going to be big sellers."

Reaction at the IAAPA Show in Kansas City and the AMOA Show in Chicago was very positive to Kiddie Rides USA's new *Video Car* and *Hot Air Balloon*, company officials said.

The *Video Car* is a red Ferrari, molded out of very tough fiberglass, that faces an electronic video screen. "Unlike some of our competitors' video cars, the main attraction of our piece is that the car moves back and forth and side to side while the child is playing the video game," LaForce explains. "This is a very important feature because even if the child is too young to comprehend the video game itself, he or she will at least get a ride for their money and not just sit in a vehicle that doesn't move."

The game itself is done in full color graphics and involves staying on the road and scoring points before the fuel tank empties. The child does this by controlling the steering wheel and the gas pedal. The demographic appeal of Kiddie Rides USA's *Video Car* will be fairly wide, attracting both tots to 10-year-olds.

"The *Hot Air Balloon* is the first of its kind," LaForce says. "The top of the ride is made from real hot air balloon material that actually fills itself with air when coin activated. When the ride is over, the balloon portion deflates."

The ride features colorful red, white, and blue balloon material. LaForce says that for just a few dollars more, the 7-foot tall *Hot Air Balloon* can be customized with a logo or design screen printed directly onto the balloon material. Each *Hot Air Balloon* ride comes with an extra balloon, which is constructed out of tough rip resistant material. During the course of the ride, the child hears continuous music, such as "Around The World In 80 Days."

Kiddie Rides USA's Circus of Fun catalog has just been published and will be sent to you free of charge by calling 800/553-8000 or writing to Kiddie Rides USA, 604 Main St., Davenport, Iowa 52803.

Start your engines

Atari bursts into its second decade of driving games by introducing *Pole Position*.

"Pole Position is a length ahead of any driving game currently on the market," said John S. Farrand, president of Atari's coin video games division. "From the moment the player gets the green light, shifts into high gear, swerves around curves, and passes the competition, they're in total control of the ultimate driving machine."

The game's goal is simple: finish your qualifying lap in 73 game seconds or less and place in the main race on the Fuji Speedway. Eight positions are available; the driver qualifying at 58½ game seconds or under is awarded the "pole position." This is the front, inside starting position and earns a bonus of 4,000 points.

The green light flashes, and the competition starts. The player jockeys for position among the other racers while maneuvering around curves and avoiding water slicks that slow the car down. The player will also be delayed in the event of a crash with another car or a road sign. The cars explode on the screen, then disappear for a split second—only to reappear to start the race from where the crash occurred. The grass on the sides of the speedway will also slow the driver's lap time.

The race is measured in game time: 75 seconds that tick down the screen's scoreboard. If a lap is finished with seconds left on the clock, extended time is awarded and the player can immediately continue on the next lap.

Each time the finish line is crossed with seconds left, additional time is the reward until an operator-determined number of laps have been completed. At that point, a flag girl waves the player across the final finish line.

Pole Position offers three operator options: length of qualifying lap, number of racing laps, and levels of difficulty for both qualifying and racing laps. The game is available in both sit-down and upright models. The sit-down features four-channel sound, the upright stereo.



Code name: 'Liberator'

So begins the challenge—and the adventure—of Atari's new coin video game, *Liberator*.

The evil Malaglon army has invaded many friendly star systems, and the Liberator is leading a squad of four drone ships in the fight to destroy the enemy's bases.

As game play begins, the player, as the Liberator, finds himself in deep space. The Liberator must destroy the enemy scouts, using the new Midi Trak-Ball to control a cursor that appears on the screen.

Once the scout ships are destroyed, the Liberator can get on with his mission: to destroy the red flashing missile bases on the invaded planets and to protect his drone ships from enemy spacecraft and incoming missiles. Then it's off to the next planet.

In addition to the satellite missiles fired from the planet's bases, the mission is threatened by the appearance of enemy flying saucers from the planet's surface.

Once the Liberator has reached the second star system, the bases start firing particle missiles in addition to the satellite missiles. In the third star system, "banded" planets appear, and missile bases suddenly have the capability to turn into fireballs.

In the ninth star system, the Liberator is confronted with "smart planets" that have a white master base with the ability to sense when a laser beam is aimed in its direction. In the eleventh star system, the missile bases turn into starballs—red circular shapes that behave like fireballs but when shot, slow down only temporarily.

Operator options on *Liberator* include bonus levels, game difficulty, and game lives.

Debugging 'Millipede'

Just when you thought you'd mastered the Atari *Centipede* game, and it was safe to put the bug spray away...Atari does it again with *Millipede*, a new coin video game.

In *Millipede*, you're the Archer, deep in a forest glade with only your bow and arrows to keep you safe. Suddenly, the insects start to appear.

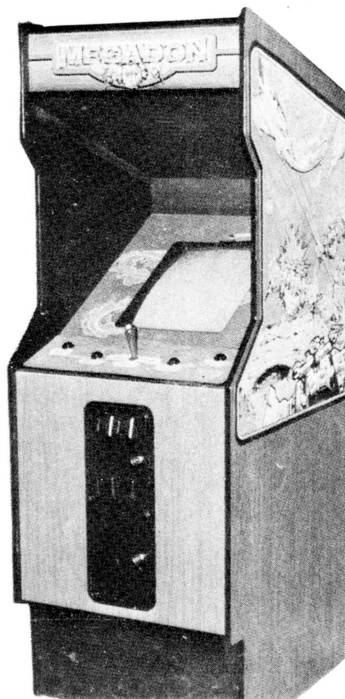
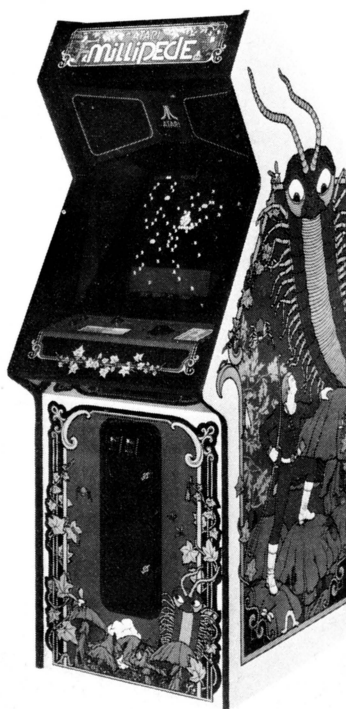
The millipede makes his entrance, snaking down through a mushroom field in the Archer's direction. If he hits the creature, it breaks up—the hit portion becomes a mushroom, the remainder continues its track to the bottom of the screen. Sounds simple, but don't be deceived. As soon as one millipede has been destroyed, another appears to take its place.

Should the millipede reach the player's shooting level, it will continue to move back and forth across the screen as new head segments start "side-feeding" from just above the player's level. The speed of new millipedes alternates between fast and slow with each new introduction, and the mushroom field scrolls down one level with each new millipede introduced.

The millipede is only the first of an entirely new cast of video game characters: along with the familiar spider (as many as six of them now), the player battles bees, dragonflies, beetles, mosquitos, inchworms, and earwigs, each bug with its own chilling dangers.

A new feature in *Millipede* is the existence of "DDT" bombs on the screen in strategic locations. This enables the player to destroy everything within the area of the insecticide's poisonous cloud. He detonates the bomb with a direct shot.

Operator options include spider difficulty affecting the "easy" play levels, beetle difficulty affecting the "intermediate" play levels, and side-feed difficulty affecting the "advanced" levels. Bonus point levels, game levels, and coin options are also operator selectable.



First product

Megadon, Photar's first offering, has 255 levels of play and dip switch adjustments to vary the degrees of difficulty.

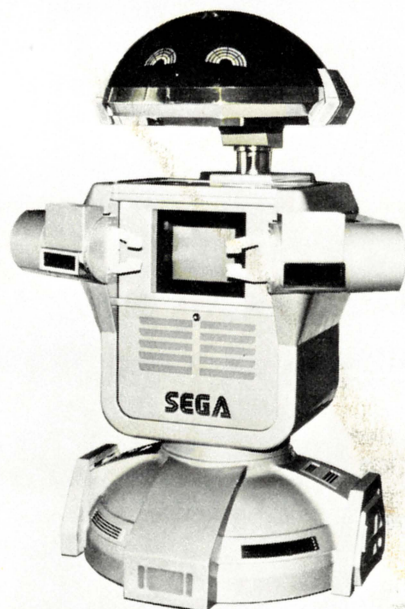
The player controls an ion-powered Megadon Fighter by use of a fire button equipped joystick. By using the joystick for direction and a "thrust" button, positioned for the player's convenience on both the right and left sides of the joystick, the player's Fighter is maneuvered into varied positions to destroy Cosmic Infidels.

The player must avoid contact with "Baby Ergs," (worthless, destructive, and indestructible obstacles), purple lines, Cosmic Infidels, and periodic "Terrible Ergs." "Terrible Ergs" are extremely aggressive and may go through all barriers, objects, and Infidels in pursuit of the player.

By using the fire button, the player must destroy all Cosmic Infidels with "Ion Bombs." The number of available bombs is displayed at the top of the screen. Upon being destroyed, the Infidels are transformed into stationary and poisonous skulls. One bomb will destroy an Infidel, while the number of Ion Bombs required to destroy a Terrible Erg varies.

Excess shots into destroyed Infidels, Ergs, or purple lines create green "poison splatters." Contact with poison splatters will destroy the Megadon Fighter.

Aids to the Trade



Human-like robot

Sega Enterprises Inc. lifted the wraps on its new mechanical robot at the recent AMOA Show held in Chicago.

Known as *Sega Chan*, the gleaming, futuristic robot can be a hit at arcades, shopping malls, and other sites where promotional impact is desired. Utilizing the latest in microcomputer technology, *Sega Chan* features a special voice recognition device. This device permits the robot to respond verbally to certain questions when asked, his eyes and mouth lighting up when he speaks.

Additional special features of the robot include: a built-in videocassette player and video display screen for playing videotaped messages; two speakers for sound (one for the video player and one for voice); a multi-purpose tray for serving food and drinks; and special pockets for dispensing food, drinks, literature, etc.

Standing nearly 60 inches tall, this electromechanical marvel can raise his

head over 7 inches for additional height. *Sega Chan*'s head can also move 15 degrees to the left and right. *Sega Chan* can move forward and backward and can turn a 360 degree circle in either direction, making him easy to operate in small areas. Fitted with two mechanical arms, the robot can open these arms to a 45 degree angle and may be adapted to a variety of functions.

A wide variety of optional accessories will be available to adapt *Sega Chan* to perform many additional tasks. Some of these accessories include: video camera, instant camera, horoscope, microwave oven, refrigerator, automatic control of the robot within a certain area, and interchangeable arms to suit different purposes. Touch sensors and danger prevention sensors make *Sega Chan* completely safe to operate.

Contacts: Robert S. Rosenbaum, Sega Electronics, Inc., 16250 Technology Drive, San Diego, CA 92127. Telephone: 619/485-4464.

Maintenance T-Card System

Methods Research Corporation has developed this new *T-Card System* to help reduce costly machine breakdowns due to lack of proper maintenance. The board shown covers a six-month maintenance schedule for 100 machines.

The red date cards show the date of the first day of each week for a six-month period. Blue and buff T-Cards are set up for each machine that must be maintained. Card data includes the type of machine, the maintenance period for that machine (weekly, monthly, quarterly, etc.), the number of the machine, machine location, maintenance routine, etc.

As maintenance is done, the machine

cards are then moved to the week of the next scheduled maintenance. As each week is cleared, the date card is then turned over to show a continual six-month schedule.

After the left-hand panel has been cleared, it is removed, all the other panels are moved to the left, and the cleared panel with new, appropriate date cards is inserted on the right.

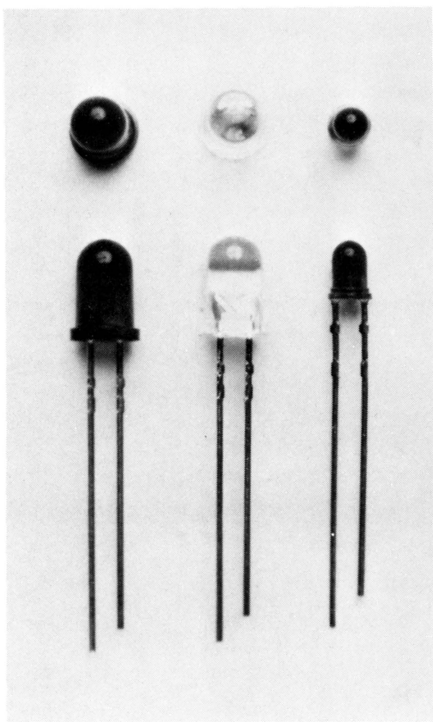
On a 10-year basis, this system for 100 machines will cost approximately 40 cents per machine per year.

For information on this and many other scheduling aids, write for a free color-illustrated catalog to: Methods Research Corporation, Asbury Avenue, Farmingdale, NJ 07727, or call toll-free 800/631-2233.

PREVENTIVE MAINTENANCE CONTROL				
JAN 1	JAN 8	JAN 15	JAN 22	JAN 29
Machine 1	Machine 1	Machine 1	Machine 1	Machine 1
Machine 2	Machine 2	Machine 2	Machine 2	Machine 2
Machine 3	Machine 3	Machine 3	Machine 3	Machine 3
Machine 4	Machine 4	Machine 4	Machine 4	Machine 4
Machine 5	Machine 5	Machine 5	Machine 5	Machine 5
Machine 6	Machine 6	Machine 6	Machine 6	Machine 6
Machine 7	Machine 7	Machine 7	Machine 7	Machine 7
Machine 8	Machine 8	Machine 8	Machine 8	Machine 8
Machine 9	Machine 9	Machine 9	Machine 9	Machine 9
Machine 10	Machine 10	Machine 10	Machine 10	Machine 10
Machine 11	Machine 11	Machine 11	Machine 11	Machine 11
Machine 12	Machine 12	Machine 12	Machine 12	Machine 12
Machine 13	Machine 13	Machine 13	Machine 13	Machine 13
Machine 14	Machine 14	Machine 14	Machine 14	Machine 14
Machine 15	Machine 15	Machine 15	Machine 15	Machine 15
Machine 16	Machine 16	Machine 16	Machine 16	Machine 16
Machine 17	Machine 17	Machine 17	Machine 17	Machine 17
Machine 18	Machine 18	Machine 18	Machine 18	Machine 18
Machine 19	Machine 19	Machine 19	Machine 19	Machine 19
Machine 20	Machine 20	Machine 20	Machine 20	Machine 20
Machine 21	Machine 21	Machine 21	Machine 21	Machine 21
Machine 22	Machine 22	Machine 22	Machine 22	Machine 22
Machine 23	Machine 23	Machine 23	Machine 23	Machine 23
Machine 24	Machine 24	Machine 24	Machine 24	Machine 24
Machine 25	Machine 25	Machine 25	Machine 25	Machine 25
Machine 26	Machine 26	Machine 26	Machine 26	Machine 26
Machine 27	Machine 27	Machine 27	Machine 27	Machine 27
Machine 28	Machine 28	Machine 28	Machine 28	Machine 28
Machine 29	Machine 29	Machine 29	Machine 29	Machine 29
Machine 30	Machine 30	Machine 30	Machine 30	Machine 30
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PCPC LED lamps

Photo Chemical Products of California Inc. (PCPC), a supplier of information display panels, is now introducing a new line of low cost, very high



brightness visible LED lamps designated as *PC3400 Series* (3mm) and *PC5400 Series* (5mm).

These high intensity LED lamps are available with diffused colored lens (80 or 100mcd typical), transparent colored lens (160mcd typical), and water clear lens (200mcd typical). They are binned for brightness and are available in red, green, yellow, and orange. Additionally, they are IC compatible and have tinned leads for ease of soldering.

PCPC's low cost LED lamps are used in the following applications: back-lighted panels, status indicators, overlays, alphanumeric displays, and lighted switches.

Delivery is immediate. Price at the 1,000-piece level is 25 cents each regardless of color. For additional information, contact: Keith Luskin, PCPC, 18031 Susana Road, Rancho Dominguez, CA 90221. Telephone: 213/603-0400.

Coin counter/ packager

The first production run of 100 AAccurate Counters' *Series P1500 Coin Counter/Packagers* have been delivered to Brandt Inc., according to Warren Austin, president of AAccurate Counters Co.

The delivery is the first part of a

large order placed by Brandt, Austin explained.

According to Austin, the *P1500* is the first portable battery powered coin processor ever introduced. Weighing just 15 pounds, it uses silicon chip technology to offer many features only found on larger, more expensive machines.

For example, the silicon chip micro-computer "brain" maintains a running unit count by coin denomination and includes a totalizing program with memory to provide running cumulative totals when counting coins on route. The counter does not have to be reset at each counting location.

The *P1500* can also be programmed to batch by rolls and half rolls or to allow quick rolling and bagging. Counter operators select the desired functions through an electronic solid state control panel with dual electronic meters. The counter can be programmed to stop in a wide range—from 0 to 9999.

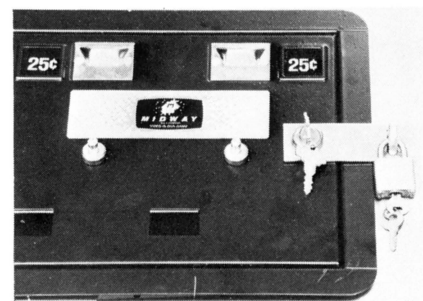
Austin stresses that the *P1500* has been designed and engineered for ease of operation and dependability. Counting is accomplished by a photo-electric eye, insuring accuracy. The counter uses a transfer belt rather than a feed-tire, resulting in a smoother flow of coins. This feature, notes Austin, is usually found only in larger machines.

Additional features of the *P1500* that simplify and improve coin handling are a half-speed switch and a reverse switch. The half-speed switch facilitates handling of large volumes of mixed coins, while the reverse switch makes it easy to clear jammed coins that are bent or otherwise mutilated.

For additional information, contact AAccurate Counters Co., 12 Spruce Drive, West Chester, PA 19380.



Breaking and entering



The industry as well as the nation is going through economic hard times. This produces an element in the nation that is widespread and in simple language is called "breaking and entering."

This industry that deals so much in cash has to be more alert and security conscious than ever. The initial development of the security hasp for vending equipment has basically done an adequate job, but it is very unattractive and it damages the cabinet.

Big State Supply Co. has just become the exclusive distributor of the latest innovation in security bars for any vending machine; this includes video, pinball, pool, etc.

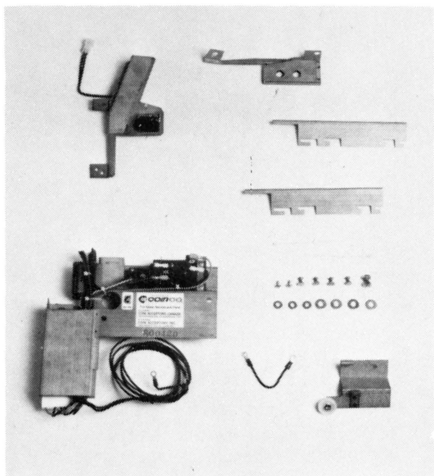
The *Lok-Guard* is 4½ inches long, 1½ inches wide, weighs 4½ ounces, and is made of solid stainless steel with nickel backing. The size, weight, and appearance of this security bar makes it a very compact package.

Lok-Guard's stainless steel finish will not detract from the appearance of your cabinet, and at 4½ ounces, it is economically shipped and very simply installed with only one eye bolt and using your coin door lock to make it a very secure hasp.

For further information please contact: Big State Supply Company, 1349 E. Seminary Drive, Fort Worth, TX 76115. Telephone: 800/772-2708 (Texas); 800/433-2915 (National).

Cigarette vending conversion kit

Coin Acceptors Inc. has introduced a simple, inexpensive *cigarette vending price conversion kit* that permits



cigarette vending up to \$6.35 per pack.

Coin Acceptors, which is marketed under the trade name "Coinco," is the world's leading producer of coin handling equipment for the Vending and Amusement industries.

The new conversion kit, which can be installed on location, is a quick, low-cost means of price conversion for cigarette machine vendors. It allows for vends up to \$6.35 in 5 cent increments and offers a dual-price option. The \$6.35 cigarette vending price conversion kit is Coinco's answer to vend price problems cigarette operators have been faced with. The kits are available for National Vendors, Automatic Products, Rowe Cigarette machines and can be obtained through leading distributors everywhere, including the 31 Coinco branch offices.

For further information on the \$6.35 cigarette vending price conversion kit, call Coinco toll-free at: 800/325-2646.

Free Compu-Pulse booklet

Compunetic Devices (Las Vegas) has published a technical manual for its *Compu-Pulse* heart-rate reading machine. The booklet is available free of charge to present operators of the counter top device, as well as to future buyers.

The publication, titled *Compu-Pulse Operators Manual*, gives a stem-to-stern description of the machine, including a parts list and board schematics.

The manual includes a description

of the firm's warranty program, parts specifications, and theory of operation. More specific items are covered in sections titled Operating Suggestions, Computer Board Replacement, and Finger Tester Theory of Operation.

The booklet offers a computer board assembly drawing and schematic plus drawings on the cabinet (with cabinet parts list). Other sections cover volume control, troubleshooting, maintenance, and two-coin operation.

Interested parties should contact Compunetic Devices, 3353 S. Highland Dr., Las Vegas, NV 89102 or phone 702/731-1418.



Promotion book into second printing

The second edition of *Promoting Your Game Center* is now available. This book expands the first edition with some additional promotion suggestions and an anthology of promotion articles written by Carol Kantor and published in various industry trade magazines.

"The book was written originally to give operators ideas and information on how to plan and implement a promotion," Kantor commented. "The response to the first book was excellent. This year I have made some additions and included selected articles to

give operators even more resources from my book."

The book covers the basics of promotion and advertising for game centers. It includes different type contests, grand openings, player clubs, public relations, and more information on how to run a successful promotion.

Promoting your Game Center gives many ideas that can work in locations that choose not to use tokens. "Although tokens are an advantage for promoting, there are many promotions that do not require giving free plays or using the tokens," Kantor noted. "The key to a good promotion program is to have a balance of different types of events and contests that will make your location more fun."

Kantor has been working in marketing for the coin amusement industry since 1976. In 1979 she started Business Builders, a promotion and advertising agency specialized in serving the industry. Prior to this she was manager of marketing services at Atari Inc., where she initiated many of its programs for distributors and operators such as The Coin Connection newsletter. Kantor has her articles on promotions for the industry published regularly in industry trade magazines.

The new edition of *Promoting Your Game Center* is now available by sending a check or money order for \$10 (\$8.50 plus \$1.50 postage and handling) to Business Builders, 10381 S. De Anza Blvd., Suite 209, Cupertino, CA 95014.

1983 maintenance catalog

The 32-page catalog has more than 50 different roofing, flooring, and general maintenance products. Each product is accompanied by product usages, coverages, prices, and pictures.

Many of the products have free sample offers. (Sample offers not valid for home use.) An order form containing a list of free samples is provided in the catalog. Do-it-yourself and save with this handy catalog.

To receive your free copy of the *1983 Randustrial Maintenance Catalog*, write or call, Randustrial Corporation, 13311-NR Union Avenue, Cleveland, Ohio 44120. Phone 216/283-0300. Toll free (except Ohio) 800/321-4662.

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TIME: 11:00 A.M.

PREVIEW DATE: FRIDAY, FEBRUARY 18, 1983

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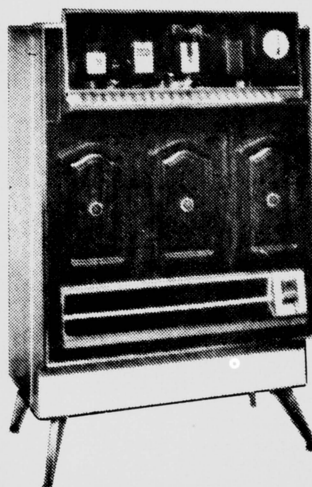
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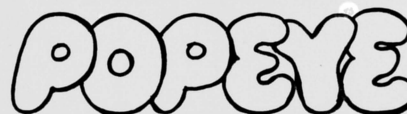


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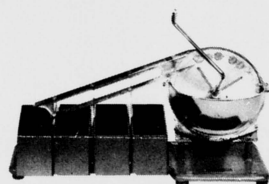
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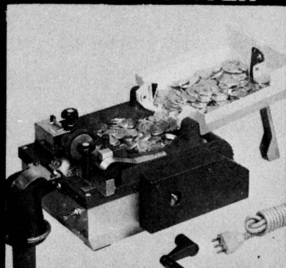
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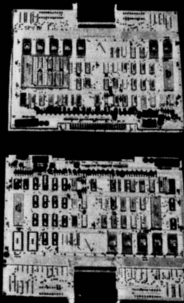


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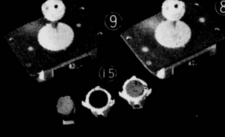
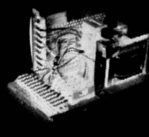
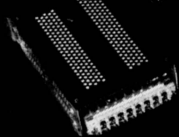


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